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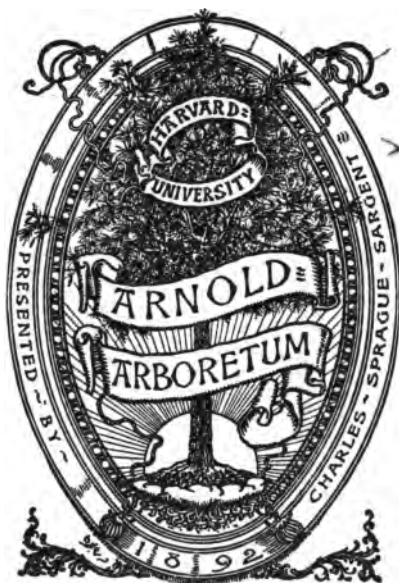
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Issued January 23, 1915.

U. S. DEPARTMENT OF AGRICULTURE.
BUREAU OF PLANT INDUSTRY.

WILLIAM A. TAYLOR, *Chief of Bureau.*

INVENTORY
OF
SEEDS AND PLANTS IMPORTED

BY THE

OFFICE OF FOREIGN SEED AND PLANT INTRODUCTION
DURING THE PERIOD FROM OCTOBER 1
TO DECEMBER 31, 1912.

(No. 33; Nos. 34340 to 34727.)



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INVENTORY OF SEEDS AND PLANTS IMPORTED BY THE OFFICE OF FOREIGN SEED AND PLANT INTRODUCTION DURING THE PERIOD FROM OC- TOBER 1 TO DECEMBER 31, 1912 (NO. 33; NOS. 34340—34727).

INTRODUCTORY STATEMENT.

The remarkable success which has attended the introduction of Chinese plants into America is no doubt due to the similarity between the climate of eastern China and that of eastern North America. This success of the Chinese plants, which nurserymen are rapidly coming to realize, will give special interest to the remarkable collection of plants from western China which, through the courtesy of the Arnold Arboretum, will be distributed from this office as soon as a stock of them has been prepared. The collection was made by Mr. E. H. Wilson, now of the Arboretum, during his expeditions in the various provinces of western China, and among the 79 different numbers (34523 to 34601), most of which will find a place somewhere in American horticulture, the following are of special economic importance as plant-breeding material or for use as ornamentals in both city and country yards: No. 34601, a new and remarkable species of wild peach, *Prunus mira*, which bears an edible fruit containing a smooth instead of a furrowed stone (a character quite unknown heretofore among peaches), which may be used in the improvement of the commercial peach; Nos. 34525, 34527, and 34546, three promising new hollies which may prove hardy here; No. 34537, a new Ampelopsis, *A. megalophylla*, with large, divided leaves 3 feet in diameter; No. 34544, a 70-foot maple, *Acer catalpifolium*, the leaves of which color a golden yellow in autumn; Nos. 34538 and 34549, the Yunnan pine, *Pinus sinensis yunnanensis*; No. 34555, the Chinese butternut, *Juglans cathayensis*, a bush or small tree; Nos. 34558, 34560, 34563, 34574, 34576, and 34582, six species of *Prunus* for those who are doing breeding work in this genus; Nos. 34580 and 34581, two species of *Vitis*; No. 34583, the Chinese close relative of the southern sweet-gum tree, *Liquidambar formosana*, which has proved hardy in the Arnold Arboretum; No. 34589, an undescribed species of quince, *Cydonia* sp.; No. 34590, a new spine-bearing hazelnut (*Corylus* sp.) with large fruits; and No. 34599, a new species of *Magnolia*, *M. wilsonii*.

During the period covered by this inventory Messrs. Paul and Wilson Popenoe, two young California plant collectors who have visited India in the interest of commercial firms, have sent in some unusually interesting material, including the bangilan, No. 34366, *Sterculia macrophylla*, a striking ornamental with brilliant orange-scarlet fruits which produce a blaze of color and can be seen for a great distance; No. 34494, the rambutan from Singapore, *Nephelium lappaceum*, one of the commonest and most palatable fruits of the Malay peninsula, which has not yet been acclimated in the Western Hemisphere; No. 34495, the rambe, *Baccaurea motleyana*, a straw-colored fruit with a gooseberry flavor, from the same region; No. 34496, the remarkable duku, or doekoe, of Java, *Lansium domesticum*, a fruit which, notwithstanding its delicious and refreshing character, has been entirely neglected in the West Indies. Mr. Wilson Popenoe has distinguished for the first time this duku from the langsat of the Philippines. From Seharunpur Mr. Popenoe sent a native amaranth, *Amaranthus gangeticus*, No. 34497, which is used in India in place of spinach.

From correspondents and our consuls abroad the following have been received: No. 34351, the African oil-bean tree, *Pentaclethra macrophylla*, from southern Nigeria, which yields seeds producing an oil only 10 per cent less valuable than cottonseed oil, probably adapted to conditions in southern Florida; Nos. 34353 and 34431, the baño, *Mangifera verticillata*, a remarkable new species closely related to the mango and adapted to the inundated regions of Mindanao, but with white-fleshed fruit, the quality of which would put it on a par with the mango, while for stock purposes it may prove of value; Nos. 34356 to 34359, seeds of valuable timber-producing trees from Piracicaba, Brazil, for forestry experiments in Florida; No. 34361, a new strain of hairy vetch developed at Guelph, Canada, adapted to the humid conditions of the Eastern States; No. 34364, *Carissa carandas*, a black-fruited species of this interesting fruiting hedge plant from India, via Saff, Egypt; No. 34368, the pili nut of the Philippines, *Canarium ovatum*, a new table nut to be served just as salted almonds are now; Nos. 34381 and 34384 to 34386, four species of the genus *Nothofagus*, beeches of Chile, some of which, because of their valuable timber and evergreen character, deserve to be tested extensively in the moist coastal region about San Francisco; No. 34387, the *Persea lingue* of Chile, which, although reported to have leaves that are poisonous to stock, because of its ability to live on all kinds of soil should be tested as a stock for the avocado, and hybrids with it ought to be made; No. 34415, a seedless-fruited form of *Berberis vulgaris*, found at Sherborn, Mass., by Miss Martha L. Loomis and which, in view of the unusual fruitfulness of the bar-

berry, may prove of commercial importance; No. 34420, the famous nipa palm of the Orient, *Nypa fruticans*, with the leaves of which the houses of the natives are thatched and from the sap of which alcohol in great quantities is made, preliminary trials indicating that this palm will probably grow in southern Florida along the tidal swamps and possibly on the Everglades where not too cold; Nos. 34426 and 34427, a variety of pop corn from Spain with a purple aleurone layer and peculiarly adapted for cross-fertilization; Nos. 34440 to 34454, 15 named varieties of mango from Trinidad, representing local and East Indian introduced sorts; No. 34493, the che fruit from the Yangtze Valley, *Cudrania tricuspidata*, which has already fruited at Augusta, Ga., bearing a delicate-flavored edible fruit that looks like a small pink Osage orange, to which it is botanically related and with which it might hybridize; No. 34620, a wild species of asparagus, *A. acutifolius*, from the dry slopes of the Maritime Alps of southern France, the shoots of which are gathered and form a regular article of commerce, being thin but very delicate in flavor; No. 34622, the Bushman grass, *Aristida* sp., from the Kalahari Desert, which, together with the Tsama melon, forms the principal stock and game food of the country; No. 34630, a tall-growing tropical fruit-bearing vine, *Tetrastigma harmandi*, from Luzon, which has fruits that resemble the Scuppernong grape in appearance and make a good "refresco;" Nos. 34643 to 34654, through Miss E. R. Scidmore, a collection including the adzuki and other beans used in Japan for confectionery purposes and for the manufacture of the remarkable bean cheeses, or curds, which are so much used by the Japanese; No. 34657, through Mr. C. V. Piper, a subtropical lawn grass, *Osterdamia matrella*, for use in southern Florida, Hawaii, and Porto Rico, which at Manila has proved superior to Bermuda grass; No. 34661, a remarkable hybrid eucalypt, *Eucalyptus trabuti*, discovered by Dr. Trabut in Algiers and named after him, which proves to be one of the most vigorous eucalypts yet known and is said to be the first undoubted hybrid discovered; No. 34663, a variety of potato from Bogota, Bolivia, which the sender thinks is resistant to the Phytophthora, which disease, he reports, has made the acclimatization of imported varieties there impossible; No. 34697, a Korean persimmon, *Diospyros kaki*, which can be kept until Easter; No. 34698, a variety of avocado, *Persea americana*, of which a tree 100 years old was found by Dr. Gustav Eisen in the Pincio Garden at Rome, the fruits of which were mature in November before the early frosts of that region occur; No. 34713, a small-fruited variety of Chinese persimmon from Canton, which is used there as a stock on which to graft the larger fruited forms of this fruit; Nos. 34715 to 34724, a collection of seeds of New Zealand trees and shrubs suited to practically frostless regions.

The manuscript of this inventory has been prepared by Miss May Riley, the botanical determinations have been made and the notes on geographic distribution compiled by Mr. H. C. Skeels, and the notes on nomenclature prepared under the supervision of the Committee on Scientific Orthography by Mr. S. C. Stuntz, who has also had general supervision of this inventory, as of all the publications of this office.

DAVID FAIRCHILD,
Agricultural Explorer in Charge.

OFFICE OF FOREIGN SEED AND PLANT INTRODUCTION,
Washington, D. C., July 22, 1914.

INVENTORY.

34340. COLOCASIA ESCULENTA (L.) Schott.

Dasheen.

(*C. antiquorum* Schott.)

From Calabar, Southern Nigeria. Presented by Mr. F. Evans, Superintendent of Agriculture. Received October 4, 1912.

"The tannia or dasheen known here as 'coco yam,' or the 'little yam.' There are a number of varieties cultivated in this province; I have already seen five distinct kinds; the one I send you is called by the natives around here '*Ekuri akpan*.'" (Evans.)

Tuber.

34341 to 34343.

From Turkestan. Presented by Mr. Patrick O'Mara, New York, N. Y., who received them from Mr. Vaclar Niemetz, of the Russian Department of Agriculture. Received September 30, 1912.

34341. PYRUS sp.

Pear.

34342. PLATANUS ORIENTALIS L.

Oriental plane tree.

Distribution.—A spreading tree found in the countries bordering on the eastern end of the Mediterranean Sea from Greece to Persia. Generally cultivated as a street tree.

34343. AMYGDALUS PERSICA L.

Peach.

(*Prunus persica* Stokes.)

"White fig-shaped." (Niemetz.)

34344 to 34348. STIZOLOBIUM spp.

From Parlakemedi. Presented by Mr. D. Hooper, Botanical Survey of India Department, Calcutta, India. Received September 30, 1912.

34344. STIZOLOBIUM NIVEUM (Roxb.) Kuntze.

Lyon bean.

(Reg. No. 34700.)

34345. STIZOLOBIUM sp.

(Reg. No. 34701.)

34346. STIZOLOBIUM PACHYLOBIUM Piper and Tracy.

Fleshy-pod bean.

(Reg. No. 34702.)

34347. STIZOLOBIUM PACHYLOBIUM Piper and Tracy.

Fleshy-pod bean.

(Reg. No. 34703.)

34348. STIZOLOBIUM PACHYLOBIUM Piper and Tracy.

Fleshy-pod bean.

(Reg. No. 34705.)

"All these are recognized locally under the name of '*Dukku chikkudu*,' and have been known to be in cultivation for centuries." (Hooper.)

34349 and 34350. SECALE CEREALE L.**Rye.**

From Rittergut Wronow, Germany. Presented by Mr. Fritz Claassen. Received October 2, 1912.

34349. "Original K. von Rümker's winter rye. No. 1." Yellow.

34350. "Original K. von Rümker's winter rye. No. 2." Green.

34351. PENTACLETHRA MACROPHYLLA Benth.

From Calabar, Southern Nigeria. Presented by Mr. F. Evans, Superintendent of Agriculture. Received October 4, 1912.

"African oil-bean tree. Besides producing edible seeds which yield a good oil, the tree is large and well formed and useful as a pasture shade." (*Evans.*)

"This tree has large flattened seeds covered with a hard, brown seed coat. They are from $1\frac{1}{4}$ to $2\frac{1}{4}$ inches in length, 1.2 to 1.8 inches in breadth, and 0.3 to 0.4 inches in thickness. The oil, which is not a drying oil, on examination by a firm of soap makers was valued at about 10 per cent less than refined cottonseed oil, since the soap made was softer. The oil cake might be of equal value with that from cotton seed, but no tests have been reported." (*Bull. Imperial Institute, vol. 5, p. 10-14, 1908.*)

Distribution.—The valley of the Kamerun and Gabon Rivers in the Senegambia region of Upper Guinea, in western Africa.

34352. JUNIPERUS CEDRUS Webb.**Juniper.**

From Teneriffe, Canary Islands. Presented by Dr. George V. Perez, through Mr. Raphael Zon, Chief of Silvics, Forest Service, United States Department of Agriculture. Received October 7, 1912.

"Dr. Perez has carried on a number of experiments with juniper berries. His advice is to separate the pulp from the seed and plunge the seed in boiling water for 10 seconds before sowing." (*Zon.*)

34353. MANGIFERA VERTICILLATA Robinson.**Bafino.**

From the Philippine Islands. Presented by Mr. William S. Lyon, Gardens of Nagtajan, Manila. Received October 5, 1912.

For description, see S. P. I. No. 34431.

34354. SALIX sp.**Willow.**

From Patagonia. Presented through Mr. Raphael Zon by Mr. Joseph E. Wing, who procured them from Señor Domingo Errecobarde, Trelew, Chubut, Argentina. Received October 7, 1912.

"Red willow."

34355. SAGUERUS MINDORENSIS (Beccari) O. F. Cook.**Palm.**

(*Arenga mindorensis* Beccari, Perkins, *Fragmenta Florae Philippinae*, p. 48, 1904.)

From Mindoro. Presented by Mr. E. D. Merrill, botanist, Bureau of Science, Manila, P. I. Received October 5, 1912.

Seeds of a Philippine palm were received as *Arenga mindorensis* Beccari, the name under which the species was first described. The generic name *Areng* was published in 1803 by Labillardière (*Mém. Inst. Nat. Paris, Sci. Math. Phys.*, vol. 4, p. 209), with one species, *Areng saccharifera* (p. 215), now identified with *Saguerus pinnata* Wurm. (*Verh. Batav. Gen.*, vol. 1, p. 351, 1779), the type of the genus *Saguerus*. As both genera were founded on the same species, the older name *Saguerus* is being used instead of *Areng*, or *Arenga*.

"This palm is from 1½ to 3 meters in height; grows in thickets and on open grassy slopes. It should prove to be of decided value as an ornamental plant in green-houses. It is probable, also, that it will grow out of doors in southern California and southern Florida; certainly in the West Indies and Central America." (Merrill.)

34356 to 34359.

From Piracicaba, Brazil. Presented by Dr. Clinton D. Smith, director, School of Agriculture. Received October 7, 1912.

Quoted notes by Dr. Smith:

34356. GALIPEA MULTIFLORA (Nees and Mart.) Schultes. **Guamixinga.**

"The iron cleaner, a tree called here '*chupafarro*.'" Timber used for interior construction and boxes.

Description.—A tree found in the vicinity of Rio de Janeiro, in Brazil.

34357. ASPIDOSPERMA MACROCARPON Martius. **Guatambú.**

"An important commercial wood, the '*guatambú*', of which such things as rake and hoe handles are made. It has a large pod with flat, thin seed coverings."

Distribution.—The plains of the State of Minas Geraes in Brazil.

34358. ASPIDOSPERMA POLYNEURON Muell. Arg. **Peroba.**

"The most valuable wood commercially in this part of the State."

Distribution.—A tree found in the primeval forests of the State of Rio de Janeiro, in Brazil.

34359. FIRMIANA SIMPLEX (L.) W. F. Wight.
(*Sterculia platanifolia* L. f.)

"A tree of no great value, except to embellish parks. The leaves are not metamorphosed at all, yet bear on their margins little round fruits."

34360. ACTINIDIA CHINENSIS Planch. **Yangtaw.**

From Kuling, China. Presented by Rev. John Berkin. Received October 10, 1912.

See S. P. I. No. 21781 for description.

34361. VICIA VILLOSA Roth. **Hairy vetch.**

From Guelph, Canada. Presented by Prof. A. W. Mason, Ontario Agricultural Experiment Station, through Mr. H. N. Vinall, of the United States Department of Agriculture. Received October 10, 1912.

"A strain of hairy vetch developed by the Ontario Agricultural Experiment Station. This strain seeds heavily at Guelph and seems to be adapted to the humid conditions of the East." (Vinall.)

34362 and 34363. PHASEOLUS spp.

Presented by Walter W. Charter, Esq., Director of Agriculture, Quilimane, Portuguese East Africa. Received September 27, 1912.

"Seeds of '*Soroko*' grown in the Zambezi delta and much relished by the natives; also a variety of so-called Indian '*Soroko*' which is also grown here." (Charter.)

34362. PHASEOLUS AUREUS Roxb. **Mung bean.**

"Green seeded."

34363. PHASEOLUS MUNGO L. **Urd, or black gram.**

"Brown seeded."

34364. CARISSA CARANDAS L.**Carissa.**

From India. Presented by Mr. Alfred Bircher, of the Middle Egypt Botanic Gardens, Matania, Saff, Egypt. Received October 10, 1912.

"A thorny bush with small white flowers and black berries, good for sherbet making. The red juice, if not diluted with water, coagulates in a short time." (*Bircher.*)

34366. STERCVLIA MACROPHYLLA Ventenat.**Bangilan.**

From Penang, Malay Peninsula. Presented by Mr. Wilson Popenoe, Altadena, Cal. Received October 14, 1912.

"A magnificent ornamental tree, native of the Malay Peninsula. It is a rapid grower, attaining an ultimate height of 50 feet or more, with oval leaves 10 to 12 inches long and 8 to 10 inches wide, slightly acute at the apex, dark green and sparsely hairy above, covered with a ferruginous tomentum below.

"The fruit is a 1 to 3 seeded capsule, about 2 inches in length and brilliant orange scarlet when ripe. These capsules are borne in the greatest profusion on panicles which hang down from every branch, and as the foliage is rather scant they produce a blaze of color which is visible some distance away. The oval black seeds, of a satiny luster, are exposed by the dehiscing of the capsules and add to the ornamental effect when near by.

"This would certainly be a great acquisition for such countries as Hawaii and Porto Rico, and possibly southern Florida and the most protected locations in southern California. Even when not in fruit the tree presents a very good appearance with its straight trunk and pyramidal head of foliage." (*Popenoe, in letter dated October 1, 1912.*)

Distribution.—A large tree found on the islands of the Malay Archipelago.

34367. CASSIA BEAREANA Holmes.

From East Africa. Presented by Rev. Pliny W. Keys, superintendent, Limpopo district Methodist Episcopal Mission, Inhamban. Received September 30, 1912.

"A small tree attaining 20 to 30 feet; leaves are about 8 to 10 inches long. The seeds are blackish brown, oval, and about seven-sixteenths of an inch in length." (*E. M. Holmes.*)

34368. CANARIUM OVATUM Engler.**Pili nut.**

From the Philippine Islands. Presented by Mr. E. D. Merrill, botanist, Bureau of Science, Manila. Received October 14, 1912.

"The 'pili' nut is locally very highly esteemed and is now being exported in considerable quantities. Treated exactly as salted peanuts are, the 'pili' can not be surpassed as a table dish. The nuts are very hard and thick walled and rather difficult to crack. The local practice is to crack the nuts, then roast the seeds and remove the thin brown coating after roasting, as it is rather difficult to remove this coating from the fresh seeds." (*Merrill.*)

34378 and 34379.

From Soochow, China. Presented by Mr. N. Gist Gee, Soochow University. Received October 14, 1912.

34378. LILYUM sp.**Lily.**

"*Pah hoen* or *Pah huh*. This is said to have the power of rapidly restoring a run-down system. The outer parts are removed, and the inner softer ones have the epidermis peeled off, and then they are cooked and eaten with sugar. I have never eaten this and can not vouch for its qualities." (*Gee.*)

Bulbs.

34378 and 34379—Continued.**34379. COLOCASIA sp.**

"*Eu nar*. This grows in a sandy soil, and under proper cultivation is sure to give a good crop. It is common in the market at this season, and is comparatively cheap." (*Gee*.)

Tubers.

34380. PELARGONIUM sp.

Rose geranium.

From Port Louis, Mauritius. Presented by Mr. G. Regnard. Received October 15, 1912.

Cuttings.

34381 to 34409.

From Chile. Presented by Mr. Julio M. Foster, Santiago, who procured them from Mr. Adrian Sepuloeda, of the Ranch "San Fabian de Alico." Received October 7, 1912.

Quoted notes by Mr. Foster, except as indicated:

34381. NOTHOFAGUS DOMBEYI (Mirb.) Oersted.

Coihue.

(*Fagus dombeyi* Mirb.)

(No. 1.) "A large and beautiful tree; useful as timber."

"Differs from *Nothofagus obliqua* and *N. procera* in appearance due to its persistent foliage of intense green. A majestic and elegant tree, the largest native Chilean tree. It does not need a strong fertile soil like the roble; its needs are more plebeian, and it may prosper in moist soils, unsuited for cultivation, thanks to the fact that the roots extend parallel to the surface of the soil, which gives it the strength to resist the blasts of a heavy wind. The wood replaces that of the roble [S. P. I. No. 34385] with perfect success when used in place of it." (*Castillo and Dey, Jeografia botanica*.)

Distribution.—A large tree found in the vicinity of Concepcion, in Chile.

34382. MYRTUS sp.

Luma.

(No. 3.) "Very tall; of small diameter, compact; used for cart tongues."

34383. LITHREA CAUSTICA (Mol.) Hook. and Arn.

Litre.

(*L. venosa* Miers.)

(No. 4.) "Remarkably hard; unsplittable; excellent for wagon hubs."

34384. NOTHOFAGUS OBLIQUA (Mirb.) Blume.

Gualo.

(*Fagus obliqua* Mirb.)

(No. 5.) "Large tree, very hard."

34385. NOTHOFAGUS ANTARCTICA (Forst.) Oersted.

Roble.

(*Fagus antarctica* Forst.)

(No. 6.) "Valuable timber for general use. Known as Chile oak."

"Grown in large numbers somewhat distant from the river courses and the center of population. Its height reaches 35 meters with a diameter of 4 meters. Sheds its leaves in winter. The wood varies with the nature of the soil; it is called hualle when it comes from the roble which has not formed heartwood, reserving the name pelli for the reddish and indestructible wood furnished by specimens which have grown in dry soil. The streets of the city of Valdivia were paved with this wood, and the railway ran over the sleepers of the same wood." (*Castillo and Dey, Jeografia botanica*.)

34381 to 34409—Continued.

- 34386.** *NOTHOFAGUS PROCERA* (Poepp. and Endl.) Oersted. **Rauli.**
(*Fagus procera* Poepp. and Endl.)

(No. 7.) "Of large dimension and very valuable for furniture."

"Because of the value of its wood, which is used for the same purpose as the roble, the excessive exploitation has decimated this tree in the province of Valdivia. The wood of this tree is like that of the roble, red and compact, although of short life in contact with water. It is used for flooring and in carpentry and cooperage. Like the roble, the tree drops its foliage in winter." (*Castillo and Dey, Jeografia botanica.*)

Distribution.—A large forest tree growing on the slopes of the Andes, in Chile.

See No. 26324 for previous introduction.

- 34387.** *PERSEA LINGUE* (R. and P.) Nees. **Lingue.**
(No. 8.) "Large dimension; bark very superior for tanning purposes."

"The hardness which dominates in this plant favors a widespread distribution in the country. It grows prosperously in the vicinity of the sea and thence to a considerable altitude above its level, on the river banks and on the summits of bare arid mountains, in the stagnant meadows, and in the hot, stony deserts. The color of its wood varies from clear yellow to red and much resembles that of the caoba, on account of the beautiful veins which run through it, and in consequence of this beauty it is preferred for furniture, and in hydraulic works for its great resistance and duration. The tree also supplies the best tan bark of all our varied flora, bark which in Valdivia has given richness to one of the first and most flourishing industries. The leaves of the lingue are highly poisonous, and many animals pay for their avidity in eating them with their lives. Its fruits afford the food best liked by the wild pigeons, and give a bitter and repugnant flavor, which may be avoided by removing the crop of the bird when first killed." (*Castillo and Dey, Jeografia botanica.*)

- 34388.** *LAURELIA SEMPERVIRENS* (R. and P.) Tul. **Laurel.**
(*L. aromatica* Juss.)

(No. 10.) "Large tree; good timber."

"This species owes its name, *aromatica*, to the fragrance of its leaves. It is a tree comparable to the roble (*Nothofagus obliqua*) for its size, but differs in the inferior quality of its wood, which, nevertheless, is used very largely because of the ease of working it and the abundance of the tree. In color it varies from the white of the poplar to the brown of cinnamon, sometimes having a lemon-yellow and an olive tint alternating in the same piece. Has the disadvantage that it splits and frequently warps, due to the large amount of sap it contains, which is retained on account of the poor selection of the period of cutting." (*Castillo and Dey, Jeografia botanica.*)

- 34389.** *CRYPTOCARYA RUBRA* (Mol.) Skeels. **Peumo.**
(*C. peumus* Nees.)

(No. 11.) "Large tree; edible fruits."

- 34390.** *GEVUINA AVELLANA* Molina. **Avellano.**

(No. 12.) "Good size tree; good timber; abundant nuts, like hazelnuts."

- 34391.** *EUCRYPHIA CORDIFOLIA* Cav. **Palo santo.**

(No. 13.) "Large shrub with beautiful flowers in abundance."

34381 to 34409—Continued.

"Tree growing to 15 to 18 meters in height, with aromatic fugacious-petaled flowers which gradually change to all shades which lie between the white and the copper red, which predominates afterwards in the inflorescence up to the time of the fruit maturing. The sweetish sap is eagerly sought by many insects, which, establishing themselves in the tree, finally deposit their eggs in the bark, which when hatched give rise to injurious larvæ which bore into the wood, making it impossible to take advantage of its fine structure and beauty." (*Castillo and Dey, Jeografia botanica.*)

34392. (Undetermined.)

(No. 14.) "Large shrub with beautiful flowers in abundance and yielding edible fruit."

34393. *PEUMUS BOLDUS* Molina.

Boldo.

(No. 15.) "Very large tree with superb foliage and contains medicinal properties used in treatment of liver trouble."

"A small ornamental evergreen tree, with exceedingly hard wood, which is utilized for many kinds of implements. The bark furnishes dye material. The fruits are of aromatic and sweet taste." (*F. von Mueller, Select Plants.*)

34394. (Undetermined.)

(No. 17.) "Large shrub producing abundant berries good for cider."

34396. *SOPHORA* sp.

Pilo.

(No. 19.) "Large tree, useful for wagon spokes."

34397. *MAYTENUS BOARIA* Molina.

Maiten.

(No. 20.) "Large and beautiful ornamental tree."

"Reaches a height of 12 meters but of small diameter; this tree is without doubt the most beautiful of all native Chilean trees in foliage, which is tremulous, waving in the lightest breeze. Its leaves, of great value for forage, are sought eagerly, like those of the weeping willow, by hungry cattle. There are varieties of the tree which furnish wood finely veined with reddish and olive tints." (*Castillo and Dey, Jeografia botanica.*)

34399. *SOPHORA MACROCARPA* Smith.

Mayo.

(No. 23.) "Flowering shrub."

34400. *KAGENECKIA OBLONGA* Ruiz and Pavon.

Guayo.

(No. 24.) "Flowering shrub."

"This tree, known in Chile as *Lyday*, furnishes a wood used for building purposes, while the leaves, being very bitter, are used by the inhabitants to cure intermittent fever." (*A. A. Black, in Lindley, Treasury of Botany.*)

34401. (Undetermined.)

(No. 25.) "Shrub affording good forage for browsing"

34402. *ESCALLONIA MYRTEDEA* Bertero.

Lum.

(*E. arguta* Presl.)

(No. 26.)

Description.—A shrub found along streams in the vicinity of Rancagua, in Chile.

34403. *ESCALLONIA PULVERULENTA* (R. and P.) Persoon.

Mardrofia.

(No. 27.)

Distribution.—A shrub growing in the vicinity of Concepcion, Chile.

34404. (Undetermined.)

Chuplin.

(No. 28.) "Flowering shrub."

34381 to 34409—Continued.

- 34405. ESCALLONIA REVOLUTA** (R. and P.) Persoon. **Siete camisas.**
(No. 29.) "Flowers very beautiful."

"In Valdivia is frequently called *siete camisas* (seven shirts). It is scarce in the central valley of Chile, but frequent in the Cordillera of Santiago. In Valdivia it grows in moist soils preferably and rarely reaches a height of 5 meters, sending out branches from the base of its slender trunk. Its light soft wood is used only for fuel. (*Castillo and Dey, Jeografia botanica.*)

Distribution.—A shrub with racemes of white flowers found in the vicinity of Concepcion, in Chile.

- 34406. MELADENDRON CHILENSE** Molina. **Palo negro.**
(No. 30.) "Large black tree."

- 34407. QUILLAJA SAPONARIA** Molina. **Quillai.**
(No. 31.) "Soap tree, very large. This is a very valuable tree and should grow well in many parts of the United States."

- 34408. CHUSQUEA** sp. **Bamboo.**
(No. 32.)

- 34409. LAPAGERIA ROSEA** Ruiz and Pavon. **Copigue.**
(No. 33.) "Climbing vine; very rich flower."

- 34412. MANGIFERA INDICA** L. **Mango.**

From Honolulu, Hawaii. Presented by Mr. E. V. Wilcox, Hawaii Agricultural Experiment Station. Received October 15, 1912.

"Oahu. Nearly seedless." (*Wilcox.*)

- 34413. PARTHENIUM ARGENTATUM** A. Gray. **Guayule.**

From Saltillo, Mexico. Presented by Mr. Philip E. Holland, American consul. Received October 15, 1912.

"The plant grows along the northern frontier of Mexico, especially in dry and mountain lands. It reaches an average height of 25 inches, weighs about 20 ounces, and its average thickness at the base is $1\frac{1}{2}$ inches. In proportion to its size, each plant yields 10 per cent of pure rubber. The Mexican guayule does not produce the same milky sap common to other rubber plants.

"Scarcely any industry in Mexico has experienced so rapid a development as that of guayule rubber. Since its appearance in the market its price has advanced amazingly. In 1903 it sold for \$5 to \$7 per ton; only four years later, in 1907, the price had risen to \$50 per ton, and to-day (1911) its value is approximately \$100 per ton.

"The most valuable guayule plantations are found in the vast desert of Coahuila, a State whose wealth was made fabulous by guayule production. The States of Nuevo Leon, Chihuahua, and Tamaulipas also produce guayule in large quantities." (*Extract, Bul. Amer. Rep., 1911.*)

- 34414. PRUNUS HUMILIS** Bunge.

From Chevy Chase, Md. Presented by Mr. David Fairchild, of the Bureau of Plant Industry, U. S. Department of Agriculture. Received October 17, 1912.

"Seeds collected from a plant presented by the Arnold Arboretum and grown in Maryland since 1906. A remarkable ornamental free and early flowering plum. Its dwarf habit makes it suited for cultivation about city houses in dooryard plantings. Prof. C. S. Sargent informed me that the seed from which this plant came he bought of a fruit vendor at a railway station between Tientsin and Peking." (*Fairchild.*)

Distribution.—The provinces of Chihli and Shantung, in China.

34415. BERBERIS VULGARIS L.**Barberry.**

From Sherborn, Mass. Presented by Miss Martha L. Loomis. Received October 15, 1912.

"A barberry found growing wild here which bears seedless fruits." (*Loomis.*)

34416. PHASEOLUS ANGULARIS (Willd.) W. F. Wight.**Adzuki bean.**

From Cabanas, Cuba. Presented by Mr. S. H. Carnahan. Received October 5, 1912.

"Last year I found a few plants of what was to me a new bean. The plant is small, 4 to 10 inches tall, with yellow blossoms, but the pods set on more like a cowpea than like a white soy bean of the north. They roast nicely and make a good cereal coffee; also seem to cook as a soup bean, except a little slow to soften." (*Carnahan.*)

"These are much employed in Japan for human food. The commonest method of eating them is to make a meal from the beans, from which cakes and confections of various kinds are made." (*C. V. Piper.*)

34417. ACROCOMIA sp.

From South America. Presented by Mr. Thomas R. Gwynn, Horqueta, Paraguay. Received October 14, 1912.

"*Mbocata* (coco). The coco, from the root up, is most valuable; when it is very young, the roots, so the natives tell me, can be used as mandioca; when matured, from a foot or two above the roots toward the bud of the plant makes excellent starch, just as good as that furnished by the mandioca plant; besides, this part of the plant is a nourishing food, without any preparation, for all kinds of live stock and fowls. The leaves make the best kind of thread and twine, and woven roughly by hand the Indians make hammocks that for endurance are par excellence.

"The coco, like all the family of palms, has a long, straight body, sometimes 80 feet in height, and from its tip top sends out its long, feathery, waving leaves. The fruit is formed from the base of the leaves and resembles huge bunches of grapes in shape. From two to four bunches are furnished every year from a single tree. Another thing, the oil from the kernel is better than any olive oil to be found in this country, and the soap is equal to any in use for the toilet. The one drawback is the thorns on the stems of the leaves and on the trunk of the tree. Sometimes, however, the trunks are entirely free from thorns, especially when very tall and in full vigor. The leaves also give food to stock, and in droughts, when pasture fails, the natives fell the trees for their horses and cattle and split open the trunks, that the cattle may eat the pith." (*Gwynn.*)

34418. PSIDIUM GUAJAVA L.**Guava.**

From Dehra Dun, India. Presented by Miss Louisa M. Kelso, American Presbyterian Mission. Received October 21, 1912.

These seeds were procured at the suggestion of Mr. Charles F. Morrison, Apopka, Fla.

"I saw these trees growing in the compound of the American Presbyterian Mission, Dehra Dun, United Provinces, India, in 1882. The tree has a single trunk, which attains a height of 15 to 20 feet and is very prolific. It is perfectly hardy in that climate. Thin ice forms in the open every winter. Practically the entire annual rainfall, 140 inches, falls in three months.

"This is the finest eating guava I have ever seen and makes jelly equal to any other. The fruit is yellow, smooth, thin skinned, and elongated, not spherical, slightly larger than the yellow Cattley guava. The seeds are in a small spherical mass at the center, leaving a large quantity of white pulp free from seeds." (*Morrison.*)

34419. RUBUS sp.**Raspberry.**

From Mokanshan, Shanghai, China. Presented by Rev. J. M. W. Farnham.
Received October 5, 1912.

"This plant grows in the edge of a hedge or in a shady spot and in no respects resembles the raspberry bush. This thing is of no use in itself, bearing a very little fruit, resembling a raspberry in color, shape, and style, with a slightly acid taste. It might be of interest for hybridizing with the raspberry." (*Farnham.*)

34420. NYPA FRUTICANS Wurm.**Nipa palm.**

From Manila, Philippine Islands. Presented by Mr. E. D. Merrill, botanist, Bureau of Science. Received at the Plant Introduction Field Station, Chico, Cal., October 15, 1912.

"This species grows only along the banks of tidal streams, where it is subject to overflow by brackish water. The plant is one of great importance in the Philippines, and most of the houses in the Archipelago are roofed with thatch made of the leaves. Commercially, however, its great value lies in its production of alcohol, of which enormous quantities are distilled annually from the fermented sap.

"I suspect that the species will grow in southern Florida and will certainly grow in most parts of the West Indies and Central America if planted in its proper habitat." (*Merrill.*)

34421. LANSIUM DOMESTICUM Jack.**Langsat.**

From Mindanao, Philippine Islands. Presented by Mr. Wilson Popenoe, Altagona, Cal. Received at the Plant Introduction Field Station, Chico, Cal., October 15, 1912.

For description, see S. P. I. No. 34496.

34422. ABROMA AUGUSTA (L.) L. f.

From Calabar, Southern Nigeria, Africa. Presented by Mr. Frank Evans, Superintendent of Agriculture. Received September 28, 1912.

A large open bush widely distributed throughout the hot, moist portions of India, now cultivated in Africa. The bark affords a strong white bast fiber, which is easily separated by retting in water or by decortication. It is readily propagated by cuttings and may be made to yield annually two or three crops of shoots from 4 to 8 feet long, but requires rich land and plenty of moisture. The fiber, which is said to be stronger than sunn hemp, is strong, white, and clean, and is chiefly used for cordage by the natives. (*Adapted from Watt, Commercial Products of India, and Dodge, Useful Fiber Plants.*)

Distribution.—A shrub found in the warmer parts of India and eastward to China and the Philippines.

34423. ALEURITES FORDII Hemsley.**Wood-oil tree.**

From Biloxi, Miss. Presented by Mr. Aristide Hopkins. Received October 22, 1912.

"These nuts were procured from a tree sent out from the Office of Foreign Seed and Plant Introduction under S. P. I. No. 21013. The nuts are all very large size, and most of them contain eight seeds or kernels instead of five, as in the ordinary form.

"We believe that this is either a seed or a bud variation." (*P. Bisset.*)

For an illustration of the male blossoms of the wood-oil tree, natural size, see Plate I.



MALE FLOWERS OF THE TUNG-SHU, OR CHINESE WOOD-OIL TREE (*ALEURITES FORDII*).
(S. P. I. NOS. 34423 AND 34438.)

These flowers are white, with yellowish throats turning to red, and the tree when in full bloom is almost as ornamental as a catalpa. The chief interest attached to these flowers is their significance as showing the adaptability of the wood-oil tree for cultivation in northern Florida. The tree bearing these flowers stands on the property of Mr. W. H. Raynes, at Tallahassee, Fla. It bore two bushels of fruit last season. Pendent cluster, photographed by Mr. David Fairchild, Tallahassee, Fla., April 2, 1914. (Natural size.)



MANGO OF THE DIVINE VARIETY IN FRUIT AT THE UNITED STATES PLANT INTRODUCTION FIELD STATION, MIAMI, FLA.
(S. P. I. Nos. 34444 AND 34445.)

This variety was introduced from Trinidad, British West Indies, in 1907. It has proved to be a vigorous grower and is now in fruit for the first time. It is one of the few named varieties cultivated in the French West Indies, and is reported unusually free from fiber. Photographed by Mr. Edward Simmonds, Miami, Fla., May, 1914.

34424 and 34425.

From Venezuela. Presented by Mr. Elio J. Burguera, Tovar, Merida, through the American consul, Maracaibo. Received October 17, 1912.

34424. HORDEUM VULGARE L.

Barley.

34425. TRITICUM AESTIVUM L.

Wheat.

(*T. vulgare* Vill.)

34426 and 34427. ZEA MAYS L.

Pop corn.

From Granada, Spain. Procured through Mr. W. T. Swingle, of the Bureau of Plant Industry, January, 1912. Received October 23, 1912.

34426. (Ear No. 1.)

34427. (Ear No. 2.)

"A variety of pop corn with red pericarp, many of the seeds with purple aleurone. Plants grown from the two ears secured by Mr. Swingle in the season of 1912 produced from one to four well-formed ears per stalk. The plants possess the peculiar characteristic of producing the silk before the pollen of the same plant is shed, thus affording a natural means of avoiding self-pollination." (*G. N. Collins.*)

34429 and 34430.

Tree fern.

From Colombo, Ceylon. Presented by Mr. C. K. Moser, American consul, who received them from the curator of the Hakgala Gardens, Newara Eliya. Received October 21, 1912.

34429. ALSOPHILA CRINITA Hooker.

"A native Ceylonese species very rarely in cultivation." (*Moser.*)

34430. HEMITELIA sp.

Spores of this tree fern were received under the name *Hemitelia walkerae*, but the place of publication of this name has not yet been found.

34431. MANGIFERA VERTICILLATA Robinson.

Baño.

From the Philippine Islands. Presented by Mr. W. S. Lyon, Manila, who procured it through Mr. P. J. Wester, Bureau of Agriculture. Received October 26, 1912.

"A large tree sometimes exceeding 12 meters in height with a trunk 50 centimeters in diameter, growing in inundated regions in several parts of Mindanao, being particularly abundant around Butuan and in many places in the Agusan Valley and Davao and occurring also in the Sulu Archipelago. The baño resembles the mango in habit and appearance, though it is somewhat more upright in habit, of sparser foliage, more gnarled, and less attractive in appearance. The leaves are 12 to 18 centimeters long, elliptical to lanceolate or oblanceolate, coriaceous, smooth, with a prominent midrib. The flowers are small, blue, and appear in terminal panicles like the mango. There is considerable variation in the appearance, size, and quality of the fruit on the numerous trees. The fruit of the best is somewhat larger than a Carabao mango, from 11 to sometimes exceeding 13 centimeters in length, with an equatorial diameter of 7 to 8 centimeters, oblong oval to pyriform; stem usually inserted obliquely in a more or less irregular sinus; stigmatic area depressed; surface smooth; color yellowish green; lenticels numerous, small; skin very thin and tender, adhering closely to the flesh; flesh white, very juicy, rich, subacid, quite aromatic, of excellent flavor, partaking somewhat of the flavor of apricot and soursoop combined. The one seed is monoembryonic, large, and encased in matted coarse fibers that penetrate the flesh to a greater or less extent. The tree blooms in July and August, and the fruit ripens in August and September. The largest and best flavored baños

were obtained in Zamboanga; very good fruits were found in Davao and Butuan, and some that were very poor in Butuan and Surigao. The baño is evidently very variable pomologically, and the trees also seem to differ greatly in productiveness. The excellent flavor of the baño assures this fruit a place among the tropical fruits on a par with the mango as soon as a facile method of propagating the species asexually shall have been discovered, so that material of the best seedlings may be obtained and systematic breeding begun, reducing the fiber in the fruit. Botanically as well as horticulturally the baño is a new fruit, having been named and described last year." (*Wester.*)

34432. CORDYLINE BANKSII Hook. f.

Palm lily.

From North Island, New Zealand. Presented by Mr. D. Petrie, Epsom, Auckland. Received October 24, 1912.

"A fine, hardy, palmlike species." (*Petrie.*)

"Distinguished from *Cordylina australis* by its much longer leaves, 5 to 6 feet in length, and its drooping panicle of flowers." (*Laing and Blackwell, Plants of New Zealand.*)

Distribution.—A treelike liliaceous plant often 10 feet high, found in the northern and middle islands of New Zealand.

34433. HOLCUS SORGHUM L.

Sorghum.

(*Sorghum vulgare* Pers.)

From Puerto Bertoni, Paraguay. Presented by Dr. Moisés S. Bertoni, Estacion Agronomica. Received October 25, 1912.

34434 to 34436.

From Germany. Presented by Rev. J. B. Katzner, Collegeville, Minn. Received at the Plant Introduction Field Station, Chico, Cal., October 19, 1912. Numbered October 25, 1912.

Scions of the following:

34434 and 34435. PRUNUS spp.

Plum.

34434. Blue plum.

34435. Large and prolific prune.

34436. PRUNUS CERASUS L.

Cherry.

Sweet.

34437. MACADAMIA TERNIFOLIA F. Muell.

Queensland nut.

From Sydney, New South Wales. Purchased from Anderson & Co. Received at the Plant Introduction Field Station, Chico, Cal., October 21, 1912.

For description, see S. P. I. No. 18382.

34438. ALEURITES FORDII Hemsley.

Wood-oil tree.

From Cairo, Ga. Presented by Mr. J. B. Wight; produced by trees sent him under S. P. I. No. 21013, March, 1908. Received October 30, 1912.

For an illustration of the male blossoms of the wood-oil tree, natural size, see Plate I.

34439. STIZOLOBIUM sp.

From Coimbatore, India. Presented by Mr. D. Hooper, economic botanist, Botanical Survey of India Department, Calcutta, India. Received October 30, 1912.

"This seed was sent in under the name *Kakkavalli*, but that name has not heretofore been applied to the *Stizolobium* species.

"While the plants resemble the Florida velvet bean very closely, they are not suitable for forage, owing to the trouble caused by the stinging hairs." (*C. V. Piper.*)

34440 to 34454. MANGIFERA INDICA L.**Mango.**

From Trinidad, British West Indies. Presented by Mr. W. B. Freeman, Assistant Director of Agriculture, Port of Spain. Received October 29, 1912.

Six cuttings of each of the following:

34440. <i>Julie Martinique.</i>	34448. <i>Chinois Martinique.</i>
34441. <i>Madame.</i>	34449. <i>Julie Leotaud.</i>
34442. <i>Neelum.</i>	34450. <i>Martin.</i>
34443. <i>Amelia Martinique.</i>	34451. <i>Walajah Pasand.</i>
34444. <i>Mistake Divine.</i>	34452. <i>Tamancha.</i>
34445. <i>Divine Martinique.</i>	34453. <i>Bombay Special.</i>
34446. <i>Minnie.</i>	34454. <i>De Boissière.</i>
34447. <i>Salem.</i>	

For an illustration of a mango tree of the Divine variety (S. P. I. No. 21516) in fruit, see Plate II.

34455 to 34470.

From Lucknow, India. Presented by Mr. Wilson Popenoe, Altadena, Cal. Received October 28, 1912.

Quoted notes by Mr. Popenoe:

34455 to 34457.

34455. AMARANTHUS MANGOSTANUS Juslenius. Amaranth.

"*Chaulai Sag.*"

Distribution.—Throughout India and Ceylon in cultivated ground; used as a potherb.

34456. PORTULACA OLERACEA L. Purslane.

"*Kulfa Sag.*"

34457. AMARANTHUS GANGETICUS L. Amaranth.

"*Lal Sag.*"

"A tall, soft-wooded annual, extensively cultivated throughout India for the sake of the leaves, which are used in the same manner as spinach."

Distribution.—Throughout the Tropics; cultivated as a potherb in India.

34458. BENINCASA HISPIDA (Thunb.) Cogniaux. Wax gourd.

(*B. cerifera* Savi.)

"*Petha.*" A climber, annual, with a large pumpkinlike fruit, smooth when ripe, and covered with a waxy bloom. It is quite common around Seharunpur. When in a young state the fruits form an ingredient of vegetable curries, but their principal use is for making a sweetmeat which greatly resembles 'Turkish delight.' When cooked and used as a vegetable the fruits are rather tasteless."

34459 to 34462. CITRULLUS VULGARIS Schrad. Watermelon.

34459. *Early Lucknow.*

34460. *Farrukhabad.*

34461. "Red, bottle shaped, from Shahjehanpur."

34462. "Round, black-red, from Seharunpur."

34463. CUCURBITA PEPO L. Pumpkin.

"*Kaddu,*" common variety. The pumpkin is one of the commonest of Indian vegetables."

34455 to 34470—Continued.**34464. CUCUMIS MELO L.****Muskmelon.**

“‘*Kakri*,’ ‘*Phoot*’ variety. This is a variety of the common melon, with long cucumberlike fruits. When in a young state they are covered with soft downy hairs and are of a pale-green color, changing to yellow when ripe. When young they are eaten raw like cucumbers, which they greatly resemble. When ripe they are eaten as a melon, but are said to be of very poor flavor.”

34465. ABELMOSCHUS ESCULENTUS (L.) Moench.**Okra.***(Hibiscus esculentus L.)*

“‘*Bhindi torai*,’ ‘*Nasik*.’ Soft variety. One of the best varieties of okra.”

34466. HIBISCUS SABDARIFFA L.**Roselle.**

“‘*Patwa*.’ This is the red-stemmed variety, of which the calyxes are dark red, and is considered the best.”

34467. LUFFA CYLINDRICA (L.) Roemer.**Loofah gourd.***(L. aegyptiaca Miller.)*

“‘*Ghiya torai*.’ An annual of climbing or trailing habit, resembling the common luffa gourd, *L. acutangula*. The smooth cylindrical fruit is a foot long, sometimes even more, and when immature is considered a very good vegetable.”

34468. MOMORDICA CHARANTIA L.**Carilla.**

“‘*Karela*.’ Rainy-season variety. A slender climbing or trailing annual. Fruit is from 5 to 7 inches long, oblong, warty or tubercled on the surface, dark green when young, changing to orange when ripe. When prepared in a vegetable curry, the manner in which it is commonly used, the fruit possesses an agreeable bitterness. It should be grown on a trellis.”

Distribution.—Throughout India, and generally cultivated in the Tropics.

34469. CITRULLUS VULGARIS Schrad.**Watermelon.**“*Tinda*.”**34470. LUFFA ACUTANGULA (L.) Roxburgh.****Loofah gourd.**“*Arrow torai*.”

Distribution.—Generally cultivated in the Tropics.

34471. PANAX QUINQUEFOLIUM L.**Ginseng.***(Aralia quinquefolia Decne. and Planch.)*

From Songdo, Chosen (Korea). Purchased from Mr. J. Arthur Thompson, through Mr. George L. Shaw, of Manchuria. Received November 1, 1912.

34472. FERONIELLA LUCIDA (Scheff.) Swingle.**Kawis.**

From Saigon, Cochin China. Presented by Mr. P. Morange, Director of Agriculture, Saigon. Received November 4, 1912.

See S. P. I. No. 25888 for description.

34473. ASPARAGUS FILICINUS Hamilton.**Asparagus.**

From India. Presented by Mr. Norman Gill, superintendent, Kumaun Government Gardens, Jeolikote, United Provinces. Received November 4, 1912.

34474. ALEURITES MOLUCCANA (L.) Willd.**Lumbang.***(A. triloba Forst.)*

From Costa Rica. Presented by Mr. A. Alfaro, director, Garden of the National Museum, San Jose. Received November 4, 1912.

“Tree 10 meters high, 60 centimeters in diameter.” (*Alfaro*.)

34475. ORYZA SATIVA L.**Rice.**

From Madagascar. Presented by Mr. Stuart R. Cope, London, England. Received October 25, 1912.

"*Teimakata*. Dry mountain rice." (Cope.)

34476 to 34478.

From German East Africa. Presented by the Usumbwa Co., Usumbwa, Post Tabora. Received October 28, 1912.

Quoted notes taken from the Usumbwa Co.'s letter:

34476. HOLCUS SORGHUM L.**Sorghum.**

(*Sorghum vulgare* Pers.)

"Grows here to a height of 6 to 9 feet, but takes from five to six months to ripen. The crop is enormous, and many different kinds of the plant are grown by the natives."

34477. ELEUSINE CORACANA (L.) Gaertn.**Ragi.**

"A quick-growing and much-planted grain of 1½ to 2 feet in height. The crop ripens in about three months."

34478. CASTALIA STELLATA (Willd.) Salisbury.**Water lily.**

(*Nymphaea stellata* Willd.)

"Known as the 'sweet-scented blue lotus.' The flowers measure 3 to 4 inches across and are of a light-blue color with yellow center."

Distribution.—In rivers, lakes, and ponds in extratropical Africa and in India.

34479 to 34481. ROSA spp.**Rose.**

From Erfurt, Germany. Purchased from Haage & Schmidt. Received November 6, 1912.

Ten cuttings each of the following:

34479. ROSA DAMASCENA TRIGINTIPETALA (Dieck) Koehne.

"A single-flowered strong-growing form of *Rosa gallica* var. *damascena* grown in Bulgaria for perfume purposes." (W. Van Fleet.)

34480. ROSA GALLICA L.

"*Byzantina*. Double-flowered dwarf form, cultivated for perfume purposes in Bulgaria, France, and Germany." (W. Van Fleet.)

34481. ROSA GALLICA L.

Conditorum. This was received as *Rosa conditorum*, which seems never to have been published as a species.

"Double-flowered dwarf form, cultivated for perfume purposes in Bulgaria, France, and Germany." (W. Van Fleet.)

34482. PRUNUS FRUTICOSA Pallas.**Cherry.**

(*P. chamaecerasus* Jacq.)

From Omsk, Siberia. Presented by Mr. A. F. Reinecke, American consular agent. Received October 31, 1912.

See S. P. I. No. 32224 for previous introduction.

59872°—15—4

34484. CITRULLUS VULGARIS Schrad.**Watermelon.**

From the Union of South Africa. Presented by Mr. J. Burt Davy, Department of Agriculture, Pretoria. Received November 7, 1912.

"*Tsama melon*. Collected in the heart of the Kalahari Desert. It is one of the most useful desert plants, being the sole source of water supply for cattle trekking through the desert in the dry winter months; animals which are eating the melons do not seem to require any water. When the water supply of travelers gives out, the moisture is extracted from these melons for drinking purposes and is often used by humans." (Davy.)

34485 to 34488.

From Australia. Presented by Mr. J. A. Hamilton, Tolga, Queensland. Received November 7, 1912.

Quoted notes by Mr. Hamilton:

34485 to 34487. EUCALYPTUS spp.

Eucalyptus.

"All useful and ornamental trees."

34485. EUCALYPTUS sp.

"Bloodwood."

34486. EUCALYPTUS sp.

"Grows 3,000 feet above sea level. Latitude 17° 30' south."

34487. EUCALYPTUS SIDEROPHLOIA Benth.

"Black ironbark. Tropical variety."

34488. XANTHORRHOEA sp.

Grass-tree.

"This is not only ornamental, but a valuable resin can be obtained from it, which is used for varnish. It ought to do very well in your Southern States; the poorer the soil the better, so long as it gets the heat."

34489 and 34490. ELEUSINE CORACANA (L.) Gaertn.**Ragi.**

From Mysore, Bangalore, India. Presented by Mr. H. V. Krishnayya, acting officer in charge of the Agricultural Department. Received November 7, 1912.

Quoted notes by Mr. Krishnayya:

34489. "Kar. Sown in May and harvested in September. Also grown under irrigation."

34490. "Hullubilé. Sown in July and harvested in November. Grain considered to be the best of all varieties."

34491 and 34492. IPOMOEA CALOBRA Hill and Mueller. Calobra.

From Australia. Presented by Prof. Manson Bailey, Department of Agriculture, Brisbane, Queensland. Received November 7, 1912.

"A native convolvulus known by the natives of the Barcoo in Queensland under the name of '*Calobra*,' and by the natives of the Moonie and Balonne Rivers as '*Weir*.' It is a tall twiner with a somewhat turnip-shaped tuber. The leaves are heart shaped, somewhat oblong, and often measure 4 inches in breadth. The flower is nearly 3 inches broad, is reddish at the center, and paler toward the outside. The seed capsule is egg shaped, going to a point about 1 inch long and containing four seeds. The seeds are dark brown and about one-half inch long. The plant, which is of the sweet-potato family, is to be found in the Mulga shrubs." (Bailey, in letter of September 28, 1912.)

34491. Seeds.

34492. Tubers.

34493. CUDRANIA TRICUSPIDATA (Carr.) Bureau.**Che.***(Maclura tricuspidata Carr.)*

From Augusta, Ga. Secured by Mr. Peter Bisset, of the Office of Foreign Seed and Plant Introduction, from P. J. Berckman's Co. Received November 11, 1912.

"These fruits are from one of Mr. Wilson's introductions; an edible fruit, allied to the *Maclura* (*Toxylon pomiferum*), or Osage orange." (*Bisset.*)

"Apparently this fruit will thrive down South, and it is, as you say, both interesting and beautiful. In China it occurs throughout the Yangtze Valley, from river level to 3,000 feet altitude. It varies from a small, much-branched, thorny bush to a tree 40 to 50 feet high. The fruits are eaten by the Chinese, but are not much esteemed. In Szechwan the leaves are used for feeding young silkworms, it being claimed that worms thus fed produce a superior kind of silk to those fed upon mulberry leaves alone. The plant is exceedingly common and by no means new, but I believe with you that there is a future for it in this country as a hedge plant or ornamental tree, if nothing else." (*E. H. Wilson.*)

Distribution.—The provinces of Shantung, Kiangsu, Chekiang, Kiangsi, Hupeh, and Kwangtung; and in the islands of the Korean Archipelago.

34494 to 34496.

From Singapore, Straits Settlements. Presented by Mr. Wilson Popenoe, Altadena, Cal. Received November 8, 1912.

Quoted notes by Mr. Popenoe, except as indicated:

34494. NEPHELIUM LAPPACEUM L.**Rambutan.**

"The rambutan is one of the commonest and at the same time most palatable fruits of the Malay Peninsula. Trees are to be seen in almost every garden in both Singapore and Penang, and in its season the fruit is hawked everywhere in the streets. The tree grows to a height of about 40 feet, and when in fruit is a handsome sight, the terminal clusters of bright crimson fruits being produced on every branch. The compound leaves are made up of oblong-ovate leaflets, about 4 inches in length and 1½ inches in width. In habit of growth the tree appears to be normally rather round topped and spreading, but as it is frequently planted among numerous other trees it is forced to grow tall and slender, branching only at a considerable height above the ground.

"According to Mr. J. D'Almeida Pereira, of Singapore, there are eight or ten varieties of the rambutan, the difference being in form and coloring. The natives, however, do not distinguish between any of these varieties. He considers the '*Atjense*' variety, which he has propagated by grafting, to be the finest, as it is the sweetest in flavor and the pulp does not adhere to the seed as closely as in most varieties. From his description of this form it would appear that it is nothing less than the species *Nephelium mutabile*, which, although of distinctive appearance from the rambutan, seems to be considered by all the natives as merely a variety of the latter. Among the varieties of the true rambutan the differences do not seem to be very well marked or of great importance. In appearance a cluster of rambutans, when highly colored, is exceptionally attractive. The best forms attain, when fully ripe, a rich crimson color, while the poorer ones are greenish or yellowish, sometimes a combination of these two and lacking any tinge of crimson. The individual fruits are slightly smaller than a hen's egg, but more elongated in form; they are covered with soft spines about a half inch in length, and are borne in clusters of varying size, but rarely containing more than 10 or 12 fruits. The pericarp

34494 to 34496—Continued.

is not thick or tough, and to eat the fruit the basal end is usually torn off, exposing the aril, which, with a slight pressure on the apical end of the fruit, slides into the mouth. The flavor is mildly subacid and somewhat vinous, pleasant, but rather lacking in character. An oblong, flattened seed is inclosed in the aril.

"General form oblong elliptical; weight averaging about 1 ounce; length $1\frac{1}{2}$ inches, breadth $1\frac{1}{4}$; base rounded or slightly tapering; apex rounded or slightly tapering; stem slender, short; peduncle 8 to 10 inches long, woody, medium stout, bearing three to ten fruits; surface covered with slender, soft, fleshy spines under 1 inch in length; color rich crimson or crimson maroon, yellowish when not fully ripe; pericarp one-sixteenth to one-eighth of an inch thick, firm, greenish; aril whitish, transparent, about one-fourth inch thick, meaty, very juicy; seeds, one, large, oblong, compressed, pointed at the apex, the aril adhering to it closely; flavor subacid, vinous, pleasant."

34495. BACCAUREA MOTLEYANA Muell. Arg.**Rambe.**

"A tree of rather large size, native of the Malay region, and commonly planted in gardens in Singapore and Penang. It forms a dense unbrageous head of foliage and is of very symmetrical growth. The leaves are oval, entire, dark green in color, about 6 inches in length and 4 inches in breadth. The fruit, which is produced in great profusion in long pendent clusters on the old wood, may be described as follows: General oval form, sometimes slightly elliptical; average weight, three-fourths of an ounce; length, 1 to $1\frac{1}{4}$ inches; breadth, three-fourths to seven-eighths of an inch; base rounded or tapering almost imperceptibly; cavity none; apex rounded or tapering slightly, basin none; calyx persistent in the form of three linear-lanceolate brownish sepals, which frequently drop off when the fruit is handled; stem medium, stout, short; panicle sometimes 12 inches long, bearing from five to ten fruits; surface smooth, covered with a thin grayish tomentum; color light straw, with occasional small patches of russet; skin one-eighth to one-fourth inch in thickness, of tough, leathery texture; pulp whitish, translucent, soft, melting, very juicy; seeds normally three, but one or two of them frequently abortive or imperfectly developed, oval to elliptical, somewhat compressed and grooved, and of rather large size; flavor subacid, resembling that of a fully ripe gooseberry, pleasant; season, August to September. It is one of the commonest fruits in the Penang markets. It does not seem to be esteemed by Europeans, however, and can not be considered to possess more than ordinary merit."

34496. LANSIUM DOMESTICUM Jack.**Duku.**

"There are two distinct forms of this species, the langsat, or lanzon, as it is known in the Philippines, and the duku, or doekoe. The duku, the larger and better of the two, is one of the finest of the Malayan fruits. Although not equal to the mangosteen or so popular among the natives as the rambutan, it is a common tree in gardens and along the roadsides, and the fruit is common in the markets. The duku does not appear to occur in the Philippines, although the langsat is said to be common in the southern islands. In the Federated Malay States, however, it is much more popular than the langsat. The normal form of the duku is spherical; although fairly uniform in shape, there is much difference in the size of the fruits, the smallest being not over an inch in length, while the largest are over 2 inches. The skin is slightly furrowed longitudinally, is a dull brownish yellow in color, and covered with grayish tomentum. The skin is quite thick and, although tough and leathery, is readily peeled off, exposing the whitish, translucent flesh, divided into five segments resembling the cells

34494 to 34496—Continued.

of an orange, but more easily separated. A small amount of intercellular tissue is usually present, and this must be carefully removed before the fruit is eaten, as it has an intense and disagreeable terebinthine flavor. Three or four of the cells will be found to contain no seeds, or at least only rudimentary ones, and can be eaten entire; the one or two cells which contain perfect seeds are usually larger than the rest, and the pulp adheres to the seed quite tenaciously. They are more difficult to handle. The flavor of the pulp resembles that of no temperate fruit; it is subacid or sometimes rather acid, aromatic, and very pleasant unless one happens to obtain a specimen not fully ripe, in which case there is a strong taste of turpentine; like most other Malayan fruits, however, this one has not become popular with Europeans. The duku is produced in small terminal clusters containing from two to five fruits. As the individual fruits do not ripen at the same time, they are picked separately, with the result that one rarely sees clusters of the fruit in the market.

"General form spherical, sometimes slightly oblate; weight averaging about 2 ounces; length 1 to 1½ inches, thickness 1½ to 2½ inches; base slightly furrowed near the stem, rounded or sometimes tapering almost imperceptibly, cavity none; apex slightly flattened, stigmatic point a prominent, raised, brownish dot; calyx persistent, but usually remaining with the stem when the fruit is pulled from the tree; sepals five, small, dry, brownish; peduncle very stout and woody, covered with short, woolly hairs, bearing two to five sessile fruits; surface pubescent, sometimes slightly warty, covered with indistinct longitudinal furrowings; color dull, unattractive, brownish yellow, slightly darker near base; skin three-sixteenths of an inch thick, tough, leathery, separating readily from the flesh; cells five—two, three, or four imperfectly developed and containing only abortive seeds; seed coats membranous; flesh whitish, translucent, melting, very juicy; seeds one or two, perfectly developed, of variable size, oval, flattened, and somewhat irregular in outline; flavor subacid, much superior to that of the langsat. The langsat varies from the above description in being oval, produced in large clusters, and having a much thinner skin, by which characters it can be immediately distinguished. It is fully described as follows: General form oval to roundish oval; weight averaging not more than 1 ounce; length 1 to 1½ inches, thickness ¾ to 1½ inches; base rounded, cavity none; apex rounded, crowned by a hard, short, brownish point; calyx persistent, sepals five, small, brownish; peduncle medium stout, woody, covered with short hairs, and bearing 5 to 20 sessile fruits; surface slightly wrinkled longitudinally; tomentose; color dull brownish yellow, slightly darker near the base; skin rather tough, thin, and leathery, separating readily from the flesh; cells five—two, three, or four imperfectly developed and containing only abortive seeds; flesh whitish, translucent, melting, juicy; seeds, one or two perfectly developed of variable size, oval, flattened, sometimes rather irregular in outline, seed coats membranous; flavor subacid, not very agreeable, as it is somewhat terebinthine.

"During its season the langsat is quite common in the Manila markets and sells at a good price. A cluster of the fruits looks not unlike a cluster of loquats, except in the less attractive color.

"It is a medium-sized, rather slender tree, native of the Malay Archipelago. The compound leaves are made up of six or eight oblong-lanceolate glabrous leaflets about 4 inches in length and 1½ inches in breadth, the petiole very short. Except in the difference in the size of the fruit clusters, the two forms are, as far as could be ascertained, practically the same in characters of growth and foliage."

34494 to 34496—Continued.

"Dr. B. T. Galloway, during his brief visit in Java in 1910, was much impressed with the possibilities of this fruit. These impressions agreed with my own made in 1896 and led us to request Mr. Popenoe to make a special examination of its culture in the East Indies." (*Fairchild*.)

For illustrations showing the fruits of the duku (doekoe) and the langsats, see Plates III and IV. See S. P. I. No. 34421 for the introduction of the langsats.

34497 to 34514.

From Seharunpur, India. Presented by Mr. Wilson Popenoe, Altadena, Cal.
Received November 4, 1912.

Quoted notes by Mr. Popenoe:

34497. AMARANTHUS GANGETICUS L. Amaranth.

"*Marsa sag.* Cultivated for the sake of its leaves, which are used like spinach."

34498. CANAVALI GLADIATUM (Jacq.) DC. Sword bean.

"*Bara sem.* The young pods of this plant are eaten and are acceptable, as they are obtainable at a season when other vegetables are scarce."

34499. CUCUMIS SATIVUS L. Cucumber.

"*Khira.* Long green variety. One of the best of the local cucumbers."

34500. CUCUMIS SATIVUS L. Cucumber.

"*Khira.* Small round green variety."

34502. LAGENARIA VULGARIS Ser. Gourd.

"*Alkada* or *lauka.* Mixed varieties. The gourd is cultivated for its fruits, which are used as a vegetable when about half grown."

34503. LUFFA ACUTANGULA (L.) Roxburgh. Loofah gourd.

"*Kali torai.* Rainy-season variety."

34504. LUFFA ACUTANGULA (L.) Roxburgh. Loofah gourd.

"*Kali torai.* Hot-season variety. Similar in growth to S. P. I. No. 34505, but with ribbed fruits."

34505. LUFFA CYLINDRICA (L.) Roemer. Loofah gourd.
(*L. aegyptiaca* Miller.)

"*Ghiya torai.* Common long variety."

34506. LUFFA CYLINDRICA (L.) Roemer. Loofah gourd.
(*L. aegyptiaca* Miller.)

"*Ghiya torai.* White seeded. An annual climber with smooth cylindrical fruit a foot long or more, but edible only when about half grown."

34507. MOMORDICA CHARANTIA L. Carilla.

"*Karela.* Common large. A slender climbing or trailing annual, with oval, warty fruits 3 or 4 inches in length, green when young, orange red when ripe. They have a bitter taste and are used in curries."

34508. STIZOLOBIUM sp.

"*Purple sem.* An annual of twining habit. The immature seed pods are borne in clusters and eaten when about 6 inches in length. When cooked they are said to resemble, and to be almost equal to, the French bean."

34509. STIZOLOBIUM CINEREUM Piper and Tracy.

"*Tohar sem.* Very similar to S. P. I. No. 34508 and used in the same way."



THE DUKU, OR DOEKOE (*LANSIUM DOMESTICUM*, JACK), OF THE DUTCH EAST INDIES.

There are distinct forms of this species, the duku and the langsat. The duku, the larger and better of the two, is one of the finest Malayan fruits. The fruit is spherical, from 1 to 2 inches in diameter, dull brownish yellow in color, with a grayish tomentum. The skin is quite thick but easily removed, showing the five segments of whitish, translucent flesh, which is subacid, aromatic, and very pleasant. It is one of the best of the laven-see fruits, according to both Dr. B. T. Galloway and Mr. David Fairchild. The small terminal clusters contain from two to five fruits. Copied from a photograph by Mr. Wilson Popenoe, Singapore, Straits Settlements, 1912.



THE LANGSAT (*LANSIUM DOMESTICUM*, JACK). (S. P. I. No. 34496.)

This is the smaller of the two forms of this species, differing from the duku, or doekoe, in its thinner skin, larger clusters, and its oval fruit, the growth and foliage characters being practically the same. From a photograph by Mr. Wilson Popenoe, Penang, Straits Settlements, 1912.

34497 to 34514—Continued.**34510. PORTULACA OLERACEA L.****Purslane.**

"*Kulfa sag.* A dwarf creeping annual herb with fleshy leaves, which are sometimes used in salads, but more frequently boiled and served like spinach."

34511. SOLANUM MELONGENA L.**Eggplant.**

"*Banigan.* Long rainy-season variety. The eggplant seems to be especially adapted to the plains of central India, as it thrives there to perfection. The varieties cultivated, of which this is one of the best, appear to be of exceptionally good quality, although the size of the fruit is not large."

34512. TRICHOSANTHES ANGUINA L.**Snake gourd.**

"*Chachinda.* White variety. An annual of climbing habit. The long, cucumberlike fruits are picked when young, cut into strips, and served like French beans."

34513. TRICHOSANTHES ANGUINA L.**Snake gourd.**

"*Chachinda.* Black variety. Identical with S. P. I. No. 34512 except in the color of the fruits, which are dark instead of light green."

34514. VIGNA SESQUIPEDALIS (L.) Fruwirth.**Asparagus bean.***(Dolichos sesquipedalis L.)*

"Cuba or asparagus bean. An annual of climbing habit grown for its long pod, which when immature is served like the French bean. The pods when mature are 9 to 12 inches long."

34515. AMYGDALUS DAVIDIANA (Carr.) B. S. and Z.**Peach.***(Prunus davidiana Franch.)*

From Tientsin, China. Procured through Mr. Samuel S. Knabenshue, American consul general. Received at the Plant Introduction Field Station, Chico, Cal., November 9, 1912.

See S. P. I. Nos. 22009 and 27310 for descriptions.

34516. AMYGDALUS DAVIDIANA (Carr.) B. S. and Z.**Peach.***(Prunus davidiana Franch.)*

From Tientsin, China. Presented by Dr. Yamei Kin. Received at the Plant Introduction Field Station, Chico, Cal., November 9, 1912.

"*Shan t'ao*, the mountain wild peach. These seeds came from the Governmental Experimental Farm in Pao Ting Fu and vicinity. They must be planted in the autumn and allowed to be split by the frost so that they will germinate readily in the spring." (Kin.)

34517. CASTANEA sp.**Chestnut.**

From Tientsin, China. Procured through Mr. Samuel S. Knabenshue, American consul general. Received at the Plant Introduction Field Station, Chico, Cal., November 9, 1912.

"The Chinese wild species of chestnut (*Castanea mollissima* Blume) has shown indications at least of being more or less resistant to chestnut blight, and these may prove to be so, as they come from the same general region as those inoculated and tested." (Fairchild.)

34519. AMYGDALUS PERSICA L.**Peach.***(Prunus persica Stokes.)*

From Guadeloupe, French West Indies. Presented by Mrs. St. George Lough, at the request of Mrs. F. T. F. Du Mont. Received November 11, 1912.

See S. P. I. 34131 for description.

Scions.

34520. COLOCASIA sp.

From Yencheng, Kiangsu, China. Presented by Rev. Hugh W. White. Received November 11, 1912.

"A giant variety, here used as food. It is quite a good substitute for potatoes when prepared in an appetizing way. I presume the taro of the Pacific Ocean is similar, but have never seen it. Other parts of China raise it, but nowhere does it grow to such size as here." (*White.*)

"The corm received weighed about 1 pound, and a part of it when baked was white, of good flavor, and fine, mealy texture." (*R. A. Young.*)

34521. MALUS sp.**Apple.**

From Siberia. Presented by Mr. Svend Lange, Barnaul. Received November 6, 1912.

"Concerning these seeds, the farmer Sokoloff told me that most of the apple seeds after they were sown unless the trees were grafted rarely gave the same size fruits." (*Lange.*)

34522. UVARIA GRANDIFLORA (Lech.) Roxburgh.*(U. purpurea Blume.)*

From the Philippine Islands. Presented by Mr. O. W. Barrett, Bureau of Agriculture, Manila. Received November 11, 1912.

"*Banauac*.—A shrubby climber related to the cherimoya, with bright-red, kidney-shaped fruits, about twice the size of a grape, in bunches of some 15 to 20, having edible subacid flesh containing numerous seeds. The plant is perhaps of little value for its fruit, but the fruiting plant is a good ornamental subject." (*Barrett.*)

Distribution.—The Province of Pegu, in Burma, and eastward through the Malay Archipelago to the Philippines.

34523 to 34601.

From Jamaica Plain, Mass. Collection of Chinese plants from the Arnold Arboretum. Received November 11, 1912.

"Part of the collections made for the Arboretum by Mr. E. H. Wilson and coming for the most part from western China. Mr. Wilson spent nearly eight years exploring the plant resources of this rich collecting field." (*Fairchild.*)

Plants of the following; quoted notes by Mr. Wilson, except as otherwise stated:

34523. TETRACENTRON SINENSE Oliver.

"A tree 20 to 50 feet high, first discovered by Dr. Augustine Henry in Hupeh, central China, and later introduced into cultivation by Mr. E. H. Wilson. It belongs to a recently described genus of Magnoliaceæ, has serrate alternate ovate-elliptic leaves and minute flowers, on drooping spikes 4 to 6 inches in length, of singular botanical interest, but of little value from a horticultural point of view." (*Veitch, Hortus Veitchii.*)

34523 to 34601—Continued.

- 34524.** *STYLIDIUM CHINENSE* Loureiro.
(*Murlea begonifolia* Roxb.)

"(Wilson No. 596.) A bush or small tree. Flowers white; thickets, Fang Hsien, 1,100 meters altitude, western Hupeh."

- 34525.** *ILEX FARGESII* Franch.

Holly.

"(Wilson No. 231.) From Hsingshan Hsien, in woods, at an altitude of 1,200 to 2,100 meters, May and September, 1907. An evergreen shrub from Hupeh and Szechwan, western China, growing from 4 to 10 feet high, and very unlike a holly. The leaves are narrowly lanceolate, spineless, leathery, deep green above, and pale green beneath."

- 34526.** *VIBURNUM FOETIDUM RECTANGULATUM* (Graebner) Rehder.

"From western China."

- 34527.** *ILEX PERNYI* Franch.

Holly.

From Hupeh and Szechwan, western China.

"A dense-growing species of holly with small spiny leaves and red berries, probably allied to *Ilex cornuta*, discovered by Père Paul Perny during his travels in China between 1850 and 1860. It is of very dwarf compact habit and has proved perfectly hardy at Coombe Wood." (*Veitch, Hortus Veitchii.*)

- 34528.** *ALBIZZIA JULIBRISSIN* Duraz.

"(Wilson No. 792.) Tree 13 meters tall; woods, 1,300 meters altitude. Changyang Hsien; very rare."

- 34529.** *ACTINIDIA* sp.

"(Wilson No. 512.) Climber, 4 to 6 meters; flowers buff yellow; fruit elongate, spotted; thickets, 1,300 meters altitude, western Hupeh; common."

- 34530.** *REEVESIA* sp.

"(Wilson No. 4395.) A tree 20 meters tall, 1.5 meters girth, one only, side of stream, 2,300 meters altitude; Panlanahan, west of Kuan Hsien. Colloquially, the '*Sohlanshu*.'"

- 34531.** *COTONEASTER SALICIFOLIA FLOCCOSA* Rehder and Wilson.

"From near Wenchwan Hsien, western Szechwan, at an altitude of 2,300 to 3,000 meters. A shrub from 2 to 4 meters in height, with graceful curving branches, floccosely tomentose leaves, and bright-red fruits."

- 34532.** *PALIURUS ORIENTALIS* Hemslay.

"(Wilson No. 105.) A bush 3 to 5 meters tall; roadside thickets, vicinity of Ichang, 300 to 600 meters altitude."

- 34533.** *DEUTZIA LONGIFOLIA* Franch.

"(Wilson No. 4300.) From Sungpan, Szechwan, western China, in thickets at an altitude of 2,700 meters, October, 1910. This species is readily distinguished from related species by the narrower, rather thicker leaves, rugose above and with strongly elevated veins on the whitish underside, by the purplish flowers in many-colored paniculiform cymes usually loose and borne on elongated branchlets, but sometimes rather dense and on short branchlets, and by the usually four styles and larger capsules measuring about 6 millimeters in diameter."

- 34534.** *CAMPTOTHECA ACUMINATA* Decaisne.

- 34535.** *MENISPERMUM* sp.

"(Purdom No. 600.)"

34523 to 34601—Continued.

34536. DEUTZIA GLOMERULIFLORA Franch.

"(Wilson No. 4383.) From Chetoshan, southwest of Tachienlu, Szechwan; altitude, 3,500 meters; October, 1910."

34537. AMPELOPSIS MEGALOPHYLLA Diels and Gilg.

"(Wilson No. 143.) From north and south Ichang, western Hupeh, in woods, at an altitude of 1,200 to 1,500 meters; June and September, 1907. One of the most interesting of the recently discovered species from western China, having canes 20 to 30 feet long and large divided leaves often more than 3 feet in diameter. Survived the winter of 1911-12 without injury at the Arnold Arboretum."

34538. PINUS SINENSIS Lambert.

Pine.

"(Wilson No. 1370.)"

34539. PRUNUS DEHISCENS Koehne.

"(Wilson No. 4029.) From western Szechwan. A shrub from 2 to 4 meters in height, with a green fruit having thin flesh easily soluble, which, according to Wilson, is dehiscent. Very similar to *P. mongolica* Maximowicz."

34540. JUNIPERUS FORMOSANA Hayata.

Juniper.

"(Wilson No. 696.) (cf. *J. taxifolius*.) Thin tree 8 to 12 meters tall; fruit orange; moist thickets, 600 to 1,300 meters altitude; south of Ichang."

34541. THUJA ORIENTALIS L.

Arbor vitae.

"(Wilson No. 1272.) A tree 8 meters tall, one tree by the wayside; altitude, 1,300 meters; Mupin, western Szechwan; a distinct arbor vitae."

34542. NEILLIA AFFINIS Hemsley.

"(Wilson No. 916 A.) Shrub, 1 to 1.5 meters; flowers, pink; thickets, 200 to 2,500 meters altitude; Washan, western Szechwan."

34543. STRANVAESIA DAVIDIANA Decaisne.

"From western Szechwan."

34544. ACER CATALPIFORMIS Rehder.

Maple.

"(Wilson No. 4208.) From near Yachoufu, western Szechwan, along streams, at an altitude of 450 to 600 meters, October, 1910. A tree reaching 10 to 23 meters in height, with a trunk sometimes 1.2 meters in diameter, having undivided leaves which turn yellow in autumn, making the tree very handsome."

34545. CUPRESSUS FUNEBRIS Endlicher.

Cypress.

"(Wilson No. 798.) Tree, 10 to 30 meters; abundant in western Hupeh up to 1,100 meters; seeds from altitudinal limits. One of the most useful and beautiful of Chinese conifers. The wood, known as *Pah mu*, is largely employed in boat building and general carpentry."

34546. ILEX MACROCARPA Oliver.

Holly.

"(Wilson No. 151.) From western Hupeh, 1907."

34547. CEPHALOTAXUS FORTUNEI Hooker.

"(Wilson No. 1386.) Tree, 8 meters; fruit, purple; roadsides, etc., 1,500 meters altitude; near Washan, western Szechwan."

34548. PINUS MASSONIANA Lambert.

Pine.

"(Wilson No. 1468.) Kiating and vicinity, west to Mupin, western Szechwan; altitude up to 1,000 meters; May and November, 1908."

34549. PINUS SINENSIS Lambert.

Pine.

"(Wilson No. 1472.) From Mupin, western Szechwan; altitude, 1,500 to 2,000 meters; November, 1908."

34523 to 34601—Continued.**34550. BERBERIS AGGREGATA** Schneider.**Barberry.**

"(Wilson No. 4286.) A bush 1.5 meters tall, racemes erect, fruit red; thickets, 2,600 to 3,000 meters altitude; Mupin, western Szechwan."

34551. ZANTHOXYLUM sp.

"(Purdom No. 185.)"

34552. BERBERIS BERGMANNIAE ACANTHOPHYLLA Schneider.**Barberry.**

"(Wilson No. 4149.) A bush 1 to 2 meters; thickets, 1,000 to 1,500 meters altitude; west of and near Wenchwan Hsien, western Szechwan. An evergreen species."

34553. BERBERIS LEVIS Franch.**Barberry.**

"(Wilson No. 4287.) Bush, 1 to 1.5 meters tall; fruit small, globose, reddish; thickets, 2,000 to 2,500 meters altitude; Panlanshan, west of Kuan Hsien, western Szechwan."

34554. BERBERIS LIECHTENSTEINII Schneider.**Barberry.**

"(Wilson No. 4154.) Bush, 1 to 2 meters; spines very long, fruit dark red. Min Valley, near Maochou, western Szechwan, 1,600 to 2,300 meters altitude."

34555. JUGLANS CATHAYENSIS Dode.**Chinese butternut.**

"(Wilson No. 371.) Bush, more rarely a tree, 2 to 15 meters tall; woodlands, 600 to 1,800 meters altitude; northwestern Hupeh; common. The Chinese butternut."

34556. PHELLODENDRON SACHALINENSE Sargent.

"(Wilson No. 1286.) A tree, 6 to 10 meters; moist woodlands, 1,200 meters altitude; Mupin, western Szechwan."

34557. EHRETIA sp.

"(Wilson No. 74.) Tree, 6 to 15 meters tall, flowers white; woodlands north and south of Ichang; 300 to 1,000 meters altitude."

34558. PRUNUS CONRADINAE Koehne.

"(Wilson No. 5.) From Changyang Hsien, western Hupeh; in woodlands, at an altitude of 1,000 to 1,200 meters; June, 1907. A tree 3 to 12 meters in height, with a trunk 20 to 50 centimeters in diameter."

34559. MORUS sp.**Mulberry.**

"(Wilson No. 8 A.) Bush, 1 to 4 meters tall; fruit black; cliffs north and south of Ichang; 600 to 1,300 meters altitude."

34560. PRUNUS CONRADINAE Koehne.

"(Wilson No. 3 B.) From woods north and south of Ichang, western Hupeh; altitude 600 to 1,600 meters; July, 1907." See S. P. I. No. 34558 for description.

34561. CELTIS sp.

"(Wilson No. 343.) Tree, 10 meters tall, 1 meter girth; open country Hsing-shan Hsien; 800 meters altitude."

34562. CELTIS sp.

"(Wilson No. 444.) Tree, 6 to 12 meters; fruit orange; woods and thickets, Patung Hsien; 1,200 to 1,300 meters altitude."

34563. PRUNUS CONRADINAE Koehne.

"(Wilson No. 7.)" See S. P. I. No. 34558 for description.

34523 to 34601—Continued.

34564. *EVODIA VELUTINA* Rehder and Wilson.

"(Wilson No. 954.) Tree, 13 meters tall; woods, 1,600 meters altitude; west of and near Wenchwan Hsien, western Szechwan."

34565. *JUGLANS* sp.

Walnut.

"(Wilson No. 390.) (Cf. *J. regia*.) Tree, 10 to 15 meters tall; cultivated; Fang Hsien; 1,500 to 2,000 meters altitude. A good-flavored walnut."

34566. *CORNUS* sp.

"(Wilson No. 1017.) Tree, 10 to 16 meters altitude; fruit blue-black; woodlands, 1,200 to 1,500 meters altitude; west of and near Wenchwan Hsien, western Szechwan."

34567. *PYRUS* sp.

"(Wilson No. 395.) Tree, 6 meters tall; flowers white; fruit small, globose, flattened; woodlands and open country, 600 to 1,300 meters altitude north and south of Ichang; common."

34568. *EUPTELEA PLEIOSPERMA* Hook. and Thoms.

(*E. davidiana* Baill.)

"(Wilson No. 538.) Hsingshan Hsing."

"An extremely interesting tree belonging to the Trochodendraceae, widely distributed in central and western China, where specimens have been obtained by many travelers, the first by Peré David, after whom it is named. The plant forms a shrub or small tree 10 to 20 feet in height with neat nearly orbicular leaves terminated by a thick mucrolike apex, and colors well in autumn; the wood resembles that of the hazel. The species is very variable, there being a great many different forms." (*Veitch, Hortus Veitchii*.)

34569. *CELTIS* sp.

"(Wilson No. 593.) Tree, 6 meters tall, fruit black; woods, Fang Hsien; 1,300 meters altitude."

34570. *LONICERA SIMILIS DELAVAYI* (Franch.) Rehder.

"From western China. It seems more natural to treat *L. delavayi* only as a glabrous or glabrescent variety of *L. similis*."

34571. *PRUNUS CYCLAMINA* Koehne.

"From Changyang Hsien, western Hupeh, in woodlands, at an altitude of 100 to 1,300 meters, April and June, 1907. A tree from 5 to 8 meters in height bearing red fruit, the calyxes resembling the corollas of the cyclamen in shape."

34573. *PHILODENDRON SACHALINENSE* Sargent.

"(Wilson No. 4217.) Small tree, 6 to 10 meters tall; woodlands, 1,600 to 2,000 meters altitude; Mupin, western Szechwan."

34574. *PRUNUS TENUIFLORA* Koehne.

"(Wilson No. 13.) From Hsingshan Hsien, western Hupeh, in woods, at an altitude of 1,300 to 1,600 meters, May and June, 1907. This species is very similar to *P. sargentii* Rehder, but differs in the smaller and apparently paler and thinner leaves, the frequent presence of pubescence on the petiole, in the peduncle (4 to 20 millimeters long), the occasional pubescence of the pedicels, the very slender cupule (6.5 to 10 millimeters long, in *P. sargentii* 5.5 to 7 millimeters long) and the smaller and broader stone (6 to 8 millimeters long, in *P. sargentii* 9 to 10 millimeters long); also very similar to *P. conradinae*."

34523 to 34601—Continued.

34575. FAGARA STENOPHYLLA (Hemsley) Engler.

(*Zanthoxylum stenophyllum* Hemsley.)

"(Wilson No. 1245.) Bush, 1 to 1.5 meters; thickets, 2,000 meters altitude; southeast of Tachienlu, western Szechwan."

34576. PRUNUS DIELSIANA LAXA Koehne.

"(Wilson No. 37.) From Patung Hsien, western Hupeh, in woods, at an altitude of 1,300 to 1,600 meters, May and June, 1907."

34577. BUDDLEIA NIVEA YUNNANENSIS (Dop) Rehder and Wilson.

"(Wilson No. 4403.) Bush, 2 to 2.5 meters; arid regions Tung Valley, near Tachienlu; 1,300 meters altitude; western Szechwan."

34578. PSEDERA THOMSONI (Lawson) Stuntz.

(*Vitis thomsoni* Lawson, in Hooker, Flora British India, vol. 1, p. 657, 1875.)

(*Parthenocissus thomsoni* Planchon, in De Candolle, Monographia Phanerogamarum, vol. 5, p. 453, 1887.)

Plants of this vitaceous climber from China were received under the name *Parthenocissus thomsoni*, published in 1887 by Planchon, based on *Vitis thomsoni* Lawson. The earliest name applied to this genus, however, is *Psedera* of Necker (*Elementa*, vol. 1, p. 158, 1790). It is therefore necessary to adopt here the name *Psedera thomsoni*.

"(Wilson No. 4184.) Three to five meters tall; cliffs, 2,000 to 2,300 meters altitude; west of and near Wenchwan Hsien, western Szechwan, October, 1910. Resembles *Psedera quinquefolia*; five rather coriaceous leaflets and stoutish branching tendrils."

34579. CLEMATIS CHINENSIS Retz.

Clematis.

"(Wilson No. 1357.) Climber, 2 to 3 meters; flowers white; produced in September; fragrant; low altitudes, western Szechwan; common."

34580. VITIS sp.

34581. VITIS FLEXUOSA Thunberg.

"From western Hupeh, China."

34582. PRUNUS MUME Siebold and Zuccarini.

"(Wilson No. 4146.) From near Wenchwan Hsien, western Szechwan, in thickets, at an altitude of 1,600 to 2,000 meters, October, 1910."

34583. LIQUIDAMBAR FORMOSA Hance.

"(Wilson No. 513.) Survived the unusually hard winter of 1911-12 at the Arnold Arboretum without injury, while the native species suffered in that locality, except in favorable situations. The feng tree of the Chinese, who utilize the lumber for making tea chests. A deciduous tree with handsome deep-green trifid leaves."

34584. POLIOTHYRSIS SINENSIS Oliver.

"(Wilson No. 500a.) From west of Wenchwan Hsien, western Szechwan, in woods, at an altitude of 1,000 to 1,300 meters, October, 1908. A tree 10 meters tall, 65 centimeters in girth, with nearly white flowers; common, rather slender, loosely branched; with gray bark deeply furrowed in adult, smooth in young trees. The leaves vary considerably in size and shape and also in degree of serration and pubescence. A colloquial name for this tree around Ichang is 'Yukuei chou.'"

34523 to 34601—Continued.

34586. *BUDDLEIA NIVEA YUNNANENSIS* (Dop) Rehder and Wilson.

"(Wilson No. 4389.) Bush, 2 to 5 meters, arid regions west of and near Wenchwan Hsien, western Szechwan."

34587. *PHELLODENDRON SACHALINENSE* Sargent.

"(Wilson No. 4217.)" See S. P. I. No. 34573 for description.

34588. *FAGARA STENOPHYLLA* (Hemsley) Engler.

(*Zanthoxylum stenophyllum* Hemsley.)

"(Wilson No. 4213.) Bush, 1 to 2.5 meters; thickets, 1,300 to 1,600 meters altitude; Mupin, western Szechwan."

34589. *CYDONIA* sp.

"(Wilson No. 4120.) Bush, 4 to 6 meters, leaves felted below; fruit large ovoid, golden on one side, reddish on the other; roadside thickets, southwest of Tachienlu; 1,600 to 2,000 meters altitude."

34590. *CORYLUS* sp.

"(Wilson No. 4283.) Bush, 5 to 6 meters tall; fruit large, spiny; woods, 2,000 to 2,300 meters altitude; common; western Szechwan."

34591. *CORYLOPSIS WILLMOTTIAE* Rehder and Wilson.

"(Wilson No. 4406.) Bush, 3 to 4 meters; thickets, 2,300 to 2,600 meters altitude; near Tachienlu, western Szechwan."

34592. *AMPELOPSIS DELAVAYANA* Planch.

"(Wilson No. 124.) From Changlo Hsien, western Hupeh, in thickets, at an altitude of 600 to 900 meters, June and September, 1907. A form with simple leaves like the variety *amurensis* and only occasionally divided into three leaflets."

34593. *ALNUS* sp.

"(Wilson No. 1377.) Tree, 6 to 20 meters; side of river and moist woodlands, 1,500 to 2,000 meters altitude; southeast of Tachienlu, western Szechwan."

34594. *LIGUSTRUM* sp.

"(Wilson No. 754.) Bush, 3 meters; flowers paniculate; side of streams, 1,200 meters altitude; South Wuchan, eastern Szechwan."

34595. *RHAMNUS DUMETORUM CRENOSERRATUS* Rehder and Wilson.

"(Wilson No. 4096.) Bush, 1 to 1.5 meters; fruit black; thickets, 1,600 to 2,300 meters altitude; near Tachienlu, western Szechwan."

34596. *ALNUS* sp.

"(Wilson No. 1377a.) Tree, 10 to 25 meters; sides of streams, 600 to 1,500 meters altitude; abundant; western Szechwan."

34597. *STYLIDIUM CHINENSE* Loureiro.

(*Marlea begoniifolia* Roxb.)

"(Wilson No. 596.)" See S. P. I. No. 34524 for description.

34598. *EUCOMMIA ULMOIDES* Oliver.

Tu chung.

"(Wilson No. 383.) Tree, 6 to 16 meters tall; sparingly cultivated; 500 to 1,500 meters altitude; western Hupeh; *Tu chung*."

34599. *MAGNOLIA WILSONII* (Finet and Gagnepain) Rehder. **Magnolia.**

"(Wilson No. 1374.) Bush or thin tree, 4 to 8 meters tall; flowers white; thickets and woodlands, 2,000 to 2,600 meters altitude; southeast of Tachienlu, western Szechwan."



PRUNUS MIRA, THE NEW SPECIES OF PEACH RECENTLY DISCOVERED NEAR TACHIENLU, SZECHWAN, CHINA, BY MR. E. H. WILSON, OF THE ARNOLD ARBORETUM. (S. P. I. No. 34601.)

It is remarkably distinct from *Amygdalus persica*, having a smooth stone and characteristic leaf scars. In this photograph, taken at the Brooksville (Fla.) Field Station on March 31, 1914, this tree, which is 2 years old, will be seen to be entirely dormant, while the branches of the two other peaches (*Amygdalus persica*), the one in Mr. Fulton's right hand, a seedling, and the other a Guadeloupe Island peach which retained its leaves all winter, were in full leaf. This habit of starting late in the spring, which it has shown at the Arnold Arboretum as well as in Florida, will probably be of great interest and importance to breeders of peaches, inasmuch as it may lead to the origination of peach varieties which bloom later in the season. The fruit of this new wild species is about an inch in diameter and edible. Photographed by Mr. David Fairchild, Brooksville, Fla., March 31, 1914.

34523 to 34601—Continued.**34600.** *DEUTZIA LONGIFOLIA* Franch.

"(Wilson No. 4326.) From Panlanshan, west of Kuan Hsien, in thickets, at an altitude of 2,400 to 2,700 meters, October, 1910." See S. P. I. No. 34533 for description.

34601. *PRUNUS MIRA* Koehne.**Peach.**

"(Wilson No. 4205.) From 2 miles north of Tachienlu; very rare, at an altitude of 2,800 meters, October, 1910. This is the first peach known with a smooth stone. A tree up to 10 meters in height, with trunk 40 centimeters in diameter; fruit subglobose, 28 millimeters long, 25 millimeters in diameter, densely tomentose, edible."

For an illustration of this tree as grown at Brooksville, Fla., see Plate V.

34602. *ANANAS SATIVUS* Schult. f.**Pineapple.**

From the Seychelles Islands. Presented by Mr. P. Rivaly Dupont, curator, Botanic Station. Received October 25, 1912.

"Suckers of our best pineapples, all derived from the variety called Victoria, but more or less improved by selection from the best plants." (*Dupont.*)

34603. *MEDICAGO SATIVA PILIFERA* Urban.**Alfalfa.**

From Tiflis, Caucasus, Russia. Presented by Mr. A. Rolloff, director, Botanic Garden. Received November 11, 1912.

Distribution.—The southeastern part of Russia in the vicinity of the Caspian Sea.

34604. *PRUNUS* sp.

From Jamaica Plain, Mass. From the Arnold Arboretum. Received November 11, 1912.

34605 to 34608. *OPUNTIA* spp.**Prickly pear.**

From Buenos Aires, Argentina. Presented by Dr. Carlos Thays, director, Jardin Botánico. Received November 14, 1912.

Cuttings of the following:

34605. *OPUNTIA ARGENTINA* Grisebach.**34606.** *OPUNTIA BRASILIENSIS* (Willd.) Haworth.**34607.** *OPUNTIA SPEGAZZINII* Weber.**34608.** *OPUNTIA CALVA* Lemaire. (?)**34609.** *PICEA BREWERIANA* S. Watson.**Velled spruce.**

From Orleans, France. Purchased from Léon Chenault & Son, Received November 14, 1912.

See S. P. I. No. 28370 for previous introduction.

34610. *PRUNUS SERRULATA* Lindley.**Cherry.**

(*P. paniculata* Thunb.)

From Kew, England. Presented by Sir David Prain, director, Royal Botanic Gardens. Received November 14, 1912.

"*Flore luteo pleno.* A yellow-flowered Japanese flowering cherry."

34611 to 34615.

From Rome, Italy. Presented by Dr. Gustav Eisen, California Academy of Sciences, San Francisco, Cal. Received November 18, 1912.

Quoted notes by Dr. Eisen:

34611 and 34612. *FOENICULUM VULGARE* Hill.

Fennel.

34611. "*Messina finocchio* is somewhat similar or rather related to the sweet fennel, but differs in so many respects that I presume it to belong to a distinct species, or at least to a very distinct variety. It is a spring, fall, and winter plant, and is eaten from September 15 to about April 1. It loves a moderately damp and warm climate, such as the one in Italy, e. g., California and southern United States, and will probably succeed even in other States. The part eaten is the lower part of the stalk, as in celery, but the edible part is globular in the best variety, not oblong, as in celery. The interior solid part is the best, the outer leafstalk being cut away. In order to be tender, the plant must be heeled up, just like celery, either with earth or matting.

"Plant in beds under cover, beginning in July, and continue to February and March. It takes about four months to mature. When 6 inches tall, transplant in beds or rows about 12 inches apart, in rich, mellow soil. As it grows, heel up with soil, so as to bleach the lower part. Those planted in beds in July and August are eaten in September, October, and November. Those planted in February are eaten in April and May. In Rome I notice general planting in gardens, 12 inches each way, in October. The plants are then 12 inches tall. A good finocchio should weigh a pound, more or less. The inner, tender, white part is eaten raw, stewed, boiled, or roasted. It is delicious raw, like celery. Requires the same soil as celery. The richer the soil the better the result."

34612. "*Roman finocchio.*"

34613 and 34614. *CAPSICUM ANNUUM* L.

Red pepper.

34613. "*Ercole Giallo* or *Golden Hercules*. Some reach the length of 6 inches, by 4 inches diameter, thickness of flesh from $\frac{1}{4}$ to $\frac{1}{2}$ inch. Sweet, tender, can be eaten raw, like an apple, or stewed, boiled, roasted, fried in oil, etc. For three months these giant peppers are our best vegetables, and in Naples you see whole cartloads sold on the streets. There is rarely even a trace of heat. Frequently as juicy as an apple. The Golden is, in my opinion, the best, and I have eaten it raw every day for three months without any ill effect."

34614. "*Rosso.*"

34615. *HIBISCUS MUTABILIS* L.

"Japanese rose hibiscus. This superb plant, growing to a large shrub or small tree, is now in the garden of the Museo delle Terme in Rome and was planted some 300 years ago by Michael Angelo, or, as some say, by the Pope Giulio III. The flowers are beautiful rose and as large as a saucer, 6 inches or more across, very flat, single. When the seed was obtained the plant was covered with hundreds of flowers, the shrub being about 10 feet or more high. It differs from any hibiscus I have ever seen in California or Mexico. A splendid plant for the lawn."

34616. *CITRUS* sp.

From Bangkok, Siam. Presented by Mr. M. de S. Macarthur. Received November 19, 1912.

Cuttings.

34617. ASPARAGUS FILICINUS Hamilton.**Asparagus.**

From India. Presented by Mr. Norman Gill, superintendent, Kumaun Government Gardens, Jeolikote, United Provinces. Received November 20, 1912.

See S. P. I. No. 34473 for previous introduction.

Roots.

34618. MEDICAGO SATIVA GLUTINOSA (Bieb.) Urban. **Alfalfa.**

From Dublin, Ireland. Presented by Sir F. W. Moore, Royal Botanic Garden. Received November 19, 1912.

"During the summer of 1911 a plant of *Medicago glutinosa* was noticed by me in the collection of alfalfas in the Royal Botanic Garden, Dublin. The plant seemed to be the true *M. glutinosa*, as evidenced by the yellow color of the flowers; also by the pods, which had from 1 to 1½ turns; glandular hairs were also present. Seeds of this plant were secured, but all of the seedlings raised at Washington produced purplish flowers and pods having from 2 to 3 turns, probably brought about by the cross-pollination through insects. This is all the more likely, as there were numerous purple-flowered forms of *Medicago sativa* growing in the immediate vicinity of the *glutinosa* plants." (G. W. Oliver.)

34619. CEIBA PENTANDRA (L.) Gaertner.**Kapok.**

(*Eriodendron anfractuosum* DC.)

From Sandakan, British North Borneo. Presented by Mr. Orlando H. Baker, American consul. Received September 24, 1912. Numbered November 21, 1912.

"The kapok tree, native in the American Tropics, is widely distributed in the Tropics of both hemispheres. It attains a height of 75 to 100 feet with wide-spreading horizontal branches, making an attractive ornamental or shade tree. It is often planted along the borders of fields for fence posts. It begins to bear seed pods with kapok down when about 5 years old, and the yield of pods increases with the age of the tree. Well-developed trees under favorable conditions yield about 7,000 pounds per acre. Kapok can not be spun, but it is an excellent material for stuffing pillows, mattresses, life preservers, etc., and its use is rapidly increasing. (L. H. Dewey.)

34620 and 34621.

From Nice, Alpes Maritimes, France. Presented by Dr. A. Robertson Proschowsky, Chemin des Grottes, St. Helene. Received November 20, 1912.

Quoted notes by Dr. Proschowsky:

34620. ASPARAGUS ACUTIFOLIUS L.**Asparagus.**

"This plant is abundant here in a wild state, and the young shoots are gathered and form quite a regular article of commerce in the market. The shoots are much thinner than those of *A. officinalis* L. (in its cultivated form), but are very delicate of taste. The plant grows in the very worst places as concerns absence of soil (in fissures of rocks, high on slopes of gravel, etc.), as well in the full burning sun as in deep shade, and it seems to me that so drought resisting a plant would be worth ameliorating. So I send you seeds for trial in desert countries."

34621. MAYTENUS BOARIA Molina.**Maiten.**

"A very graceful evergreen tree, exceedingly drought resisting, the foliage of which is much appreciated in Chile, its native country, as cattle fodder."

34632. ARISTIDA sp.**Bushman grass.**

From South Africa. Presented by Prof. J. Burt Davy, Government Agrostologist and Botanist, Union of South Africa, Department of Agriculture, Pretoria. Received November 18, 1912.

"The seed of this grass is very difficult to obtain, as it grows in the far western part of the Kalahari Desert and the eastern parts of the Great and Little Bushmanland and Namaqualand. Together with the Tsama melon (S. P. I. No. 34484) it is the principal stock and game food of the country." (Davy.)

34625. CANAVALI OBTUSIFOLIUM (Lam.) DC.

From the Seychelles Islands. Presented by Mr. P. Rivaly Dupont, curator, Botanic Station. Received November 23, 1912.

34626. CUCUMIS MELO L.**Muskmelon.**

From Kabul, India. Presented by Mr. Wilson Popenoe, Altadena, Cal. Received November 11, 1912.

"Sarda."

34627. CRATAEGUS PINNATIFIDA Bunge.**Hawthorn.**

From Nanking, China. Presented by Mr. W. Millward, University of Nanking. Received November 25, 1912.

"Red fruit (*shan cha*). I used to think the cranberry was the best fruit for sauce, but I have concluded since trying this that it is superior to the cranberry." (Millward.)

34629. PRUNUS CERASUS L.**Cherry.**

From Prague, Bohemia. Presented by Dr. Bohumil Nemec, at the request of Mr. W. A. Orton, of the Bureau of Plant Industry. Received November 26, 1912.

Scions.

34630. TETRASTIGMA HARMANDI Planchon.

From Los Banos, Philippine Islands. Presented by Mr. C. F. Baker, University of the Philippines, College of Agriculture. Received November 26, 1912.

"This is a tall-growing woody vine, which becomes loaded with fruit of the size and appearance of the Scuppernong grape and which is edible, making a very good "refresco." It is also used in Manila as an ornamental vine. Mr. Merrill tells me it is only found in Luzon and Indo-China." (Baker.)

34631. PICEA BREWERIANA S. Watson.**Veiled spruce.**

From Waldo, Oreg. Purchased from Mrs. A. M. Adams. Received November 27, 1912.

See S. P. I. No. 28370 for previous introduction.

34632. SOLANUM QUITOENSE Lamarck.

From Quito, Ecuador. Presented by Mr. S. Ordoñez Munoz. Received November 27, 1912.

Distribution.—An unarmed subshrub with fruits the size and color of a small orange, found in the vicinity of Quito, in Ecuador.

34633. CANAVALI ENSIFORME (L.) DC.**Jack bean.**

From Honolulu, Hawaii. Presented by Mr. C. K. McClelland, agronomist, Hawaii Agricultural Experiment Station. Received November 30, 1912.

"Concerning the use of jack beans as a dairy feed, Mr. P. M. Pond, of Honolulu, tells me that a few years ago he raised an excellent crop of jack beans, which he thinks averaged 20 tons per acre, but this crop, of course, was irrigated to some extent. He says that he had no great difficulty in inducing cattle to eat the jack bean. At first they refused to eat it, and then he tried wrapping it up in alfalfa and again they refused to eat it, by picking out the alfalfa and leaving the jack beans. He then ran the jack beans through a cutting machine, as he was accustomed to do with all roughage, and placed only small amounts of the jack beans in the ration with alfalfa, Para grass, and sorghum. By treating in this manner he found that they ate the vine readily, but at first refused the pods, but by the end of the week he states that they ate vines and pods quite readily and he was able to discontinue the use of alfalfa and use the jack beans in the above ration, using one-third jack beans in the roughage. Since growing this crop Mr. Pond states that he has been unable in several trials to get what he considered a good crop. The former crop was planted in July and taken off about the 1st of November. Since then he has tried different seasons of planting, but finds that the jack beans make a slow growth and have never produced as good a yield as he obtained in that first crop, and he has discontinued growing them." (McClelland.)

34634. CANAVALI ENSIFORME (L.) DC.**Jack bean.**

From Mayaguez, Porto Rico. Presented by Mr. C. F. Kinman, of the Porto Rico Agricultural Experiment Station. Received November 30, 1912.

"Of a large number of legumes that I have tried for a cover crop nothing seems so well adapted to all conditions and needs as *Canavali ensiforme*." (Kinman.)

34635. STIZOLOBIUM sp.

From Lucknow, India. Presented by Mr. H. J. Davies, superintendent, Government Horticultural Gardens. Received November 30, 1912.

"Regarding the value of the fruits as an article of food, I may say that I have eaten them regularly and appreciate them as I have other similar beans. I have not heard of any bad results from eating the pods. It must be remembered that they are eaten only in the young state, when they are tender and practically free from hair. Before cooking, the outer skin is carefully scraped so as to insure that no hairs remain. The pod is very succulent and is, so far as I know, wholesome, and may be recommended as an article of diet." (Davies.)

34636. FERONIELLA OBLATA Swingle.

From Saigon, Cochin China. Presented by Mr. P. Morange, Director of Agriculture, Saigon. Received November 25, 1912.

34637 to 34639.

From San José, Costa Rica. Presented by Mr. Ad. Tonduz, botanist, National Museum. Received December 16, 1912.

34637. PSIDIUM FRIEDRICHSTHALIANUM (Berg) Niedenzu.

"Cas."

See S. P. I. No. 26756 for previous introduction and description.

34637 to 34639—Continued.**34638.** *PSIDIUM MOLLE* Bertoloni.

"Guisarro."

See S. P. I. No. 12821 for previous introduction.

Distribution.—On the slopes of the mountains in Guatemala and Costa Rica.**34639.** *CYPHOMANDRA* sp.

"Introduced by Mr. Carlos Wercklé, Museum Garden. The ripe fruits collected a month ago. The green fruits collected to-day, November 29, 1912. They have had no preparation and may be eaten with impunity. Plants about 1 meter 50 centimeters high, 4 to 5 centimeters in diameter at the base. Fruits hanging on long peduncles." (*Tonduz.*)

Received as *Cyphomandra quitoensis*, but the place of publication of that name has not yet been found.

34643 to 34654.

From Kioto, Japan. Presented by Miss E. R. Scidmore, Seoul, Chosen (Korea).

Received November 29, 1912.

Quoted notes by Miss Scidmore:

34643. *PHASEOLUS ANGULARIS* (Willd.) W. F. Wight. **Adzuki bean.**

"*Adzuki.* The red bean used for bean paste and yokan and soup. Those of best quality cost about 15 cents United States gold per quart; smaller beans, second quality, which are most used by confectioners, cost about 10 cents United States gold per quart."

34644. *PHASEOLUS ANGULARIS* (Willd.) W. F. Wight. **Adzuki bean.**

"*Adzuki.* White, boiled, mashed, strained, cooked with sugar and kanten (seaweed gelatine) to make yokan, peppered and salted; also sugared as a confection."

34645. *SOJA MAX* (L.) Piper. **Soy bean.**
(*Glycine hispida* Moench.)

The soy bean has been listed in previous inventories as *Glycine hispida* Moench. Mr. C. V. Piper has recently shown (Journ. Amer. Soc. Agron., vol. 6, p. 75-84, 1914) that the earliest name given by Linnæus to this plant was *Phaseolus max*, that the generic name should be *Soja*, and that the correct name is therefore *Soja max* (L.) Piper.

"*Kuro.* Used for making sweet paste, but more usually boiled with a pinch of salt and a pinch of sugar added when the water is poured off or shoyu poured on and kept hot until saturated. Served as a relish or accompaniment to each meal and always found in lunch boxes sold at railway stations."

34646. *VICIA FABA* L. **Broad bean.**

"*Sora.* Usually toasted; when the shells split they are something like pop corn; also cooked with sugar."

34647. *VICIA FABA* L. **Broad bean,**

"*Ota fuka.* Same as *Sora*, but fully grown. Popped like *Sora mame*, but more often boiled, first in wood ashes to remove skins, boiled soft, and sugar or shoyu added."

34648. *PISUM SATIVUM* L. **Pea.**

"*Shiroi endo.* For toasting in a corn popper or dusted with sugar after boiling."

34643 to 34654—Continued.**34649. PISUM SATIVUM L.****Pea.**

"*Aio endo*. Toasted in a corn popper and sometimes sugared in different colors."

34650. PISUM ARVENSE L.**Pea.**

"*Aka endo*. Toasted in a corn popper and boiled with sugar; used for ornamenting balls of white bean paste."

34651. PHASEOLUS VULGARIS L.**Bean.**

"*Toroku mame* (meaning that 10 of these beans equal 6 sun, or inches). Boiled with sugar, dried, and eaten as a confection."

34652. PHASEOLUS VULGARIS L.**Bean.**

"*Naga uzura mame*. Boiled and dipped in hot sirup (*long quail*)."

34653. PHASEOLUS VULGARIS L.**Bean.**

"*Kintoku mame*. Boiled and dipped in sirup and dried as candy."

34654. SOJA MAX (L.) Piper.**Soy bean.**

(*Glycine hispida* Moench.)

"*Shiroy daiozu*. Used for making tofu or bean curd."

34655. ILEX PARAGUARIENSIS St. Hilaire.**Yerba maté.**

From Buenos Aires, Argentina. Presented by Dr. Carlos Thays, director, Jardin Botánico. Received November 14, 1912.

See S. P. I. No. 29097 for description.

34656. TRIFOLIUM ANGUSTIFOLIUM L.**Clover.**

Grown in the United States Department of Agriculture greenhouses at Washington, D. C., by Mr. G. W. Oliver, who collected the original seed 10 miles from Algiers. Numbered December 3, 1912.

34657. OSTERDAMIA MATRELLA (L.) Kuntze.**Manila grass.**

(*Zoysia pungens* Willd.)

From the Philippine Islands. Secured by Mr. C. V. Piper, of the Bureau of Plant Industry. Numbered December 4, 1912.

"This grass is abundant on or near the seashore in the Philippine Islands. Where closely clipped it makes a beautiful lawn. The Luneta in Manila some years ago was planted to Bermuda grass, but at the present time more than 90 per cent of the grass is the *Osterdamia*, which has gradually displaced the Bermuda, which it closely resembles in habit and appearance. During the past season it has been grown under temporary No. 01643. The grass has unusual promise as a lawn grass, especially near the Gulf coast and the Atlantic coast of Florida." (*Piper*.)

34658. PAEONIA sp.**Peony.**

From Mongolia. Presented by Mr. William R. Maxon, United States National Museum, who procured them through Dr. A. Hrdlička. Received December 13, 1912.

"Locality, Mongolia, about 80 miles south of the Siberian boundary, between Kiakhta and Urga, altitude 2,800 feet, occupying a narrow strip 200 to 400 feet wide on each side of the extreme summit of the ridges trending east and west; collected August, 1912." (*Maxon*.)

34659. HOLOUS SORGHUM L. Giant Sudan sorghum.
(*Sorghum vulgare* Pers.)

From Algiers, Algeria. Presented by Dr. L. Trabut. Received November 26, 1912.

"This seed does not come from the original shoot, which has not flowered this season, but from a seedling growing for some years. I consider that these seeds ought not to give other than hybrid descendants." (Trabut.)

34661 and 34662.

From Algiers, Algeria. Presented by Dr. L. Trabut. Received November 30, 1912.

34661. EUCALYPTUS TRABUTI Vilmorin. Eucalyptus.

"A hybrid between *Eucalyptus botryoides* and *Eucalyptus rostrata*. Beautiful red wood, suitable for furniture.

"A hybrid found by Dr. Trabut in sowing seeds of the *Eucalyptus botryoides* which stood near a *Eucalyptus rostrata*. Always tends to revert to the male parent. It is the first undoubted Eucalyptus hybrid, and the existence of hybrids in this genus has been denied by Baron Ferdinand Mueller. This hybrid is one of the most vigorous of the genus, and in a nursery row at the Mustapha Experiment Station has crowded out the pure species." (Trabut.)

34662. PYRUS LONGIPES Coss. and Dur. Wild pear.

"A tree of fair height, with few spines, and small, rounded, oval, suborbicular leaves; fruit small, globular, with very long peduncles. Occurs in the mountains of Setif, Anini, and l'Aures, where it reaches its highest development."

34663 and 34664. SOLANUM TUBEROSUM L. Potato.

From Bogota, Colombia. Presented by Señor J. M. Vargas Vergara. Received December 4, 1912.

Tubers of the following; quoted notes by Señor Vergara:

"Two varieties of tubers cultivated at this altitude and in the adjoining cold districts to the east. Both are comestible, and, especially the former [S. P. I. No. 34663], appreciated for table use. They grow very well both in the mixed (turboso) soil of the cold region and in the "humicos" and sandy soil of the coast (mesetas) and in the very clayey soil. The black (negra) variety has shown more power of resistance against the attacks of the *Phytophthora infestans*, which have made the acclimatization of the varieties imported from other countries impossible. The diseases which affect potatoes in other countries do not exist here."

34663.

"(No. 1.) *Tuquerrena negra*."

34664.

"(No. 2.) *Tuquerrena blanca*."

34665. KOKIA ROCKII Lewton. Tree cotton.

From Hawaii. Presented by Mr. J. F. Rock, Division of Forestry, Honolulu. Received December 7, 1912.

See S. P. I. No. 31680 for description.

"The material listed under S. P. I. No. 31680 was sent from the island of Hawaii under the name of *Gossypium drynarioides* Seemann. Seemann published under the latter name a poor description from an incomplete specimen in the British Museum, collected on the island of Molokai by Nelson, the companion of Capt. Cook. Seemann did not see the fruit and described the calyx incorrectly, owing to the state of the specimen. His species is now extinct and was confined to the island of Molokai. In

1909 another species was discovered on the island of Hawaii, from whence came the seed listed in this inventory. A study of living material and complete herbarium specimens shows these plants to be trees which are larger than any known species of *Gossypium* and are seen to differ from the species of that genus in several particulars. The most conspicuous of these are: One ovule in each cell of the ovary; large, rounded calyx lobes which overlap in the bud and which usually fall before the capsule develops, giving the calyx the appearance of being truncate. These trees have been considered as belonging to a genus (*Kokia*) distinct from *Gossypium*. The new genus and species were published in 1912 in Smithsonian Miscellaneous Collections, vol. 60, part 5, pages 2 and 3." (*Lewton*.)

According to Mr. J. F. Rock, the tree of *Kokia drymarioides*, said to be dead, bore a few flowers and seed in the summer of 1914. Mr. Rock is propagating the species, and has sent some of the seed to the Office of Foreign Seed and Plant Introduction.

34666. *HOLCUS SORGHUM* L.

Sorghum.

(*Sorghum vulgare* Pers.)

From Deerbrook, Miss. Presented by Mr. G. M. Robertson through Mr. C. V. Piper, of the Bureau of Plant Industry. Received December 10, 1912.

"'Chicken corn' is an annual sorghum, somewhat resembling Johnson grass. It was formerly abundant throughout Louisiana and Mississippi, but of late years has become very scarce, probably due to the attacks of the sorghum midge. The origin of this sorghum is not known, and the seed is secured for the purpose of making a careful comparison with Sudan grass, S. P. I. No. 25017, and Tunis grass, S. P. I. No. 26301." (*Piper*.)

34667. *ARGANIA SPINOSA* (L.) Skeels.

Argan.

(*A. sideroxylon* Roem. and Schult.)

From Tangier, Morocco. Presented by Mr. Maxwell Blake, American consul general. Received December 11, 1912.

See S. P. I. Nos. 3490 and 28783 for previous introductions and descriptions.

34668 to 34671.

From Lawang, Java. Presented by Mr. M. Buysman, Jardin Botanique. Received December 7, 1912.

34668. *SWIETENIA MAHAGONI* Jacquin.

Mahogany.

"This is the sole representative of a genus of Cedrelaceae, peculiar to the warmer parts of America, and yielding the timber known as mahogany of commerce. It is a stately tree, principally met with in Central America and Mexico, growing on the rocky soil. The leaves are imparipinnate, and the flowers axillary. The calyx is 5 cleft, short; the corolla has 5 petals, and the stamens are united into a tube bearing 10 anthers; the fruit is a 5-celled woody capsule, each cell containing numerous winged seeds. The bark is considered a febrifuge, and the seeds, prepared with oil, were used by the ancient Aztecs, as they are used by the modern Mexicans, as a cosmetic, under the name of Pepitos del Sopilotl, or Tzontecomatl. The timber is largely employed in making household furniture in this country." (*Dr. B. Seemann, in Lindley's Treasury of Botany*.)

34668 to 34671—Continued.

34669. *SYZYGium CUMINI* (L.) Skeels.
(*Eugenia jambolana* Lam.)

"A small evergreen tree met with throughout India and Burma, ascending the hills to about 6,000 feet. Is chiefly found along river beds, and is especially cultivated for its fruit in gardens and in avenues. There are several varieties that yield much better flavored fruit than others, but as a rule it is astringent and only serviceable when cooked in tarts and puddings. In Goa a wine is prepared from it, and a spirit (jambava) is spoken of by recent Sanskrit authors as distilled from the jambu. Some years ago brandy was made at Monghyr from the fermented fruit. The jaman is extensively used all over India in the manufacture of vinegar. The tasar silk worm is said to feed on the leaves of the tree. The timber is fairly durable, and is largely employed for building purposes, for agricultural implements, and for well work, since it resists the action of water. It gives a good fuel. The jambu is one of the trees held in veneration by the Buddhists, and is often planted near Hindu temples because regarded as sacred to Krishna." (*Watt, Commercial Products of India.*)

34670. *CROTALARIA SALTIANA* Andrews.

See S. P. I. No. 24119 for previous introduction.

34671. *GUILANDINA BONDUC* L.
(*Caesalpinia bonducella* Flem.)

Nickernut.

"A leguminous plant found in nearly every tropical country, particularly upon the seashore, its extensive distribution being caused by the transportation of its seeds (which have an exceedingly hard, impervious shell) from one country to another by means of oceanic currents. It is a prickly, trailing shrub 10 or 12 feet or more in height. The flowers are of a rusty yellow color, and are borne in racemes. The pods, which are about 2 or 3 inches long, flattened, and covered with prickles, contain one, two, or three large, bony, lead-colored seeds, which are very hard and beautifully polished. The kernels have a very bitter taste, and are employed by the Indian doctors as a tonic and febrifuge." (*A. Smith, in Lindley's Treasury of Botany.*)

See S. P. I. No. 33570 for previous introduction.

34672 to 34690.

This is a collection for a comparative test to determine the relative value of *Amygdalus davidiana* as a stock for a number of different varieties of peaches. As indicated, certain of the varieties are budded on common peach stocks, while others are on *davidiana* stocks which it is planned to test. The budding was done at the Chico station, and it is believed that the test will be an impartial one.

34672 to 34683. *AMYGDALUS PERSICA* L.
(*Prunus persica* Stokes.)

Peach.

34672. "Carman" on common peach (P. I. G. No. 8562).

34673. "Carman" on *A. davidiana* (S. P. I. No. 26604).

34674. "Elberta" on common peach (P. I. G. No. 8562).

34675. "Elberta" on *A. davidiana* (S. P. I. No. 26604).

34676. "Smock" on common peach (P. I. G. No. 8562).

34677. "Smock" on *A. davidiana* (S. P. I. No. 26604).

34678. "Belle of Georgia" on common peach (P. I. G. No. 8562).

34679. "Belle of Georgia" on *A. davidiana* (S. P. I. No. 26604).

34672 to 34690—Continued.**34680.** "Salway" on *A. davidiana* (S. P. I. No. 26604).**34681.** "Salway" on *A. davidiana* (S. P. I. No. 27110).**34682.** "Crawford" on *A. davidiana* (S. P. I. No. 27116).**34683.** "Crawford" on common peach (P. I. G. No. 8562).**34684 to 34688.** *AMYGDALUS PERSICA* NECTARINA Ait. **Nectarine.****34684.** Quetta nectarine (S. P. I. No. 18235) on common peach (P. I. G. No. 8562).**34685.** Quetta nectarine (S. P. I. No. 18235) on *A. davidiana* (P. I. G. No. 8481).**34686.** Crosby nectarine (S. P. I. No. 11777) on apricot stock (S. P. I. No. 26048).**34687.** Crosby nectarine (S. P. I. No. 11777) on *A. davidiana* (S. P. I. No. 26604).**34688.** Crosby nectarine (S. P. I. No. 11777) on common peach (P. I. G. No. 8562).**34689 and 34690.** *DIOSPYROS KAKI* L. f. **Persimmon.****34689.** *Diospyros kaki* (S. P. I. No. 16921) on *D. lotus*.**34690.** *Diospyros kaki* (S. P. I. No. 22350) on *D. lotus*.**34691 to 34694.**

From Manila, Philippine Islands. Presented by Mr. O. W. Barrett, chief, Division of Horticulture, Bureau of Agriculture. Received December 13, 1912.

Quoted notes by Mr. Barrett:

34691. *ANTIDESMA BUNIUS* (L.) Sprengel. **Bignay.**

"A small, handsome tree, dioecious, with simple, dark-green, leathery leaves. The fruit is small, dark red, sweet, subacid in flavor, and produced in long racemes like the currant, and may be eaten raw or made into jelly."

See S. P. I. No. 18393 for previous introduction.

Distribution.—Throughout the hotter parts of India and eastward through the Malay Archipelago to the Philippines.

34692. *MOMORDICA COCHINCHINENSIS* (LOUR.) Sprengel.

"An attractive climber of medium-vigorous growth, bearing roundish oblong fruits a little larger than an orange, having short orange-colored spines."

Distribution.—Southeastern Asia, extending from India to China, and in the Malay Archipelago eastward to the Philippines.

34693. *UVARIA* sp.

"An oblong semireniform fruit that grows in bunches of 30 to 50. The fruit is orange yellow in color; the flesh is yellowish and sweetish, gelatinous, and inclined to be acrid near the seed. The fruit grows on a scandent shrub, which should be considered an ornamental rather than an economic."

34694. *CANARIUM* sp. **Pili nut.**

"A large tree, indigenous to the Philippines, that produces an edible nut of excellent quality. There are two species—*Canarium ovatum* and *Canarium pachyphyllum*. Owing to the fact that the nuts of the two species are so similar to each other, it is impossible, not having seen the tree from which the nuts were obtained, to say to which species the seeds belong which are being sent you. Pili nuts are to some extent cultivated in southeastern Luzon, interplanted with coconuts."

34695. ANTIDESMA NITIDUM Tulasne.*(A. moritzii Muell.)*

From Los Banos, Philippine Islands. Presented by Mr. C. F. Baker, University of the Philippines, College of Agriculture. Received December 9, 1912.

"One of the finest local shrubs, of good shape and covered with great numbers of pendent clusters of small berries which are long, bright red, finally black, and which are edible. This should make an important addition to ornamental shrubs for warm countries." (*Baker.*)

34696. FARADAYA SPLENDIDA Mueller.

From Bowen Park, Brisbane, Queensland, Australia. Presented by Mr. William Soutter, secretary and manager, Queensland Acclimatization Society. Received December 13, 1912.

"A very handsome climber, native of the more tropical regions of Queensland. The outer bark of the plant is used by the natives for stupefying fish. The green bark is tied in small bundles, weighted with a stone, and dropped into holes where the fish abound. The fish immediately become affected and rise to the surface, where they are easily caught." (*Soutter.*)

Distribution.—The vicinity of Rockingham Bay, in Queensland, Australia.

34697. DIOSPYROS KAKI L. f.**Persimmon.**

From Seoul, Chosen (Korea). Presented by the American consul general, Mr. George H. Scidmore. Received December 16, 1912.

"A hardy persimmon tree of the 'sheep-nose' variety, growing in the compound of this consulate general." (*Scidmore.*)

"The 'sheep-nose' variety has such good keeping qualities that I have kept them until late Easter." (*Horace N. Allen.*)

34698. PERSEA AMERICANA Miller.**Avocado.***(P. gratissima Gaertn. f.)*

From Rome, Italy. Presented by Dr. Gustav Eisen, California Academy of Sciences, San Francisco, Cal. Received December 16, 1912.

"The tree in question is in all probability about 100 years old, and though I do not know for certain, I think it likely to have been imported from Mexico by, or at least at the time of, Valadier, the French gardener and architect, who in the beginning of 1800 arranged the Pincio Garden. The tree is growing there in perfect vigor and health, perhaps about 40 feet high, and the trunk several feet in diameter. The variety is one which I have never seen on the Pacific coast of Mexico or Central America, the fruit being 3½ inches long by 2½ inches wide, pear shaped—that is, tapering toward the stalk end. This year there were 100 fruits or over, all arriving at perfect maturity in October and November, the last ones being picked about November 15. The earlier fruits are larger and may average from one-half inch to 1 inch more than the size given above, which refers to the late fruits. In quality this fruit is equal to the very best that I have eaten in Guatemala and Mexico and is of exquisite flavor. The seed is perfectly round, pale yellow-brown, and evidently perfectly developed. The variety is also characterized by its precocity, ripening before frost. It will succeed, without any doubt, in most parts of California, Arizona, southern Texas, and the Gulf States generally; in a word, in any territory extending from the northern limit of the hardiest orange southward—that means the San Joaquin and Sacramento Valleys in California, the Coast Range, etc. Introduced into this territory the tree would prove of immense value and would enter at once into active competition with the Mexican and island avocado now imported and sold at a prohibitive price." (*Eisen.*)

34699. SORGHASTRUM STIPOIDES (H. B. K.) Nash. Jaragua grass.
(*Chrysopogon avenaceus* Benth.)

From Rio de Janeiro, Brazil. Presented by Dr. S. Mascarenhas. Received December 16, 1912.

"This seed is a native of Goyaz, Brazil. It is greatly used in the cattle camps, and springs up readily in grounds which have been burned over." (*Mascarenhas.*)

34700 to 34702.

From Shantung Province, China. Grown by Dr. William R. Faries, Coachella, Cal. Received December 17, 1912.

Quoted notes by Dr. Faries:

34700. PHASEOLUS ANGULARIS (Willd.) W. F. Wight. Adzuki bean.

"The red bean was introduced to try as poultry and pigeon food. They have proved good forage for hens and turkeys, and the seeds are eagerly eaten."

34701. PHASEOLUS ANGULARIS (Willd.) W. F. Wight. Adzuki bean.

"The green bean was introduced to try as poultry and pigeon food. These beans are showing modification in that they are longer, apices less flattened than those grown in Shantung. I wonder if they are the 'green gram' of India."

34702. SOJA MAX (L.) Piper. Soy bean.
(*Glycine hispida* Moench.)

"The yellow bean with hairy pods (soya) I sent to the department in December, 1894, I think, from Pacific Grove, Cal., as 'Manchuria beans,' and they were sent to Maine station. This would result in failure, I think. They did not do well in Orange County, Cal., but grow well here. They are fine for green shelled beans."

34703. CARICA PAPAYA L. Papaya.

From Honolulu, Hawaii. Presented by Mr. J. E. Higgins, horticulturist, Hawaii Agricultural Experiment Station. Received December 18, 1912.

"This seed was grown under our number 2593.1." (*Higgins.*)

34704. HOLCUS HALEPENSIS L. Baru grass.
(*Sorghum halepense* Pers.)

From Seharunpur, India. Presented by Mr. A. C. Hartless, superintendent, Government Botanic Gardens, through Mr. C. V. Piper, of the United States Department of Agriculture. Received December 18, 1912.

"*Effusus.* This grass is a native in the Ganges Valley, and is closely related to the Johnson grass of the Southern States, but differs in having a larger and more open panicle." (*Piper.*)

34705 to 34709. CANAVALI spp.

From Miami, Fla. Grown by Mr. Edward Simmonds at the Plant Introduction Field Station. Received December 18, 1912.

"This seed was received in 1908 from Mr. J. S. Houser, of the Cuban experiment station. It has proven very satisfactory as a green-manure crop at Miami, the plant continuing to grow throughout the winter season." (*Simmonds.*)

34705. Brown.

34708. Greenish brown mottled.

34706. Brown mottled.

34709. Pinkish brown.

34707. Greenish brown.

34710. QUERCUS SUBER L.**Cork oak.**

From North Augusta, S. C. Presented by Dr. W. E. Mealing at the request of Mr. Peter Bisset, of the Office of Foreign Seed and Plant Introduction. Received December 20, 1912.

"Collected from trees presumably sent out by the Division of Forestry about 1891."

34711. DIOSPYROS KAKI L. f.**Persimmon.**

From Canton, China. Presented by Mr. G. Weidman Groff, Canton Christian College. Received December 26, 1912.

"*Taai hung t'sz*. Large red persimmon. This is decidedly the largest and sweetest persimmon I have ever seen. It does not have any of the astringent taste so common to the persimmon. It is very highly cultivated; rarely do you find seed. The skin is thin and of a deep-red color. Fruit that I have had on my own table of this variety measures 8 inches around at its widest circumference." (Groff.)

34712. STRYCHNOS PUNGENS Solereder.

From South Africa. Presented by Prof. J. Burt Davy, government agrostologist and botanist, Union of South Africa, Department of Agriculture, Pretoria. Received December 23, 1912.

"A shrub which grows wild on the hills around Pretoria." (Davy.)

Distribution.—The Mozambique district and Lower Guinea and southward to the Kalahari region in southern Africa.

34713. DIOSPYROS KAKI L. f.**Persimmon.**

From Canton, China. Presented by Mr. G. Weidman Groff, Canton Christian College. Received December 27, 1912.

"*Kaai sam t'sz* (chicken-hearted persimmon). This is a rather inferior persimmon not commonly sold on the markets. The fruits are about the size and shape of a small egg and very difficult to ripen. A common method employed by the Chinese for ripening this fruit is to cover them over with the leaves from the bastard banyan tree for several days; of course we do not have frost here. This persimmon is used as the stock on which to graft the finer varieties." (Groff.)

34714. JATROPHA CURCAS L.**Physic nut.**

From Tampico, Mexico. Presented by Mr. Thomas H. Bevan, American vice consul in charge. Received December 23, 1912.

"A shrub about the size of a hazelnut bush, with a trunk from 6 inches to 1 foot in diameter. Its production is most prolific, the limbs often breaking off from the weight of the nuts. The nuts when first taken from the husk have a dark-brown luster, which becomes opaque after being exposed to the air for a few days. When first taken from the tree they have a taste not at all unlike that of the fresh chestnut. They are said to contain about 50 per cent of oil, which can be extracted and used for cooking, the same as cottonseed oil. These nuts can be seen growing in the yards of nearly all the Mexican houses in the outskirts of Tampico. The Mexicans prefer them to peanuts, maintaining that their flavor is much more delicate. Along the narrow strip of land between the Tuxpam Canal and the Gulf of Mexico, in the State of Vera Cruz, they grow wild by the millions, and apparently thrive better in their native state, growing in the sand dunes, than in the rich land in the valley of the Panuco." (Bevan.)

It should be remembered that, like many other euphorbiaceous seeds, the physic nuts have a purgative effect. They should therefore be tested with extreme care.

34715 to 34724.

From Wellington, New Zealand. Presented by Mr. G. J. Clapham, Public Works Department. Received December 4, 1912.

Quoted notes from Blackwell and Laing, Plants of New Zealand:

34715. METROSIDEROS TOMENTOSA A. Rich. Pohutukawa.

"This handsome tree, sometimes 70 feet in height, with spreading branches and brilliant scarlet flowers in large terminal cymes rarely grows far from the sea or an inland lake. It finds a foothold in all sorts of impossible-looking places. Often it clings to the side of a cliff, and puts forth long twisted roots that attach it to the rocky wall. Specimens may frequently be found hanging from the top of a bank, with the roots above, and the branches almost dipping into the sea below. When growing on level ground, great bunches of red fibrous rootlets may occasionally be seen hanging from the boughs. These do not reach the ground, and their function is unknown. The timber is extremely hard and durable."

34716. CLIANTHUS PUNICEUS (Don) Solander. Kowhai.

"A white-flowered form of the kowhai, which in its scarlet-flowered form is one of the most gorgeous of New Zealand flowering plants. With its flowers 2 inches in length in long pendulous racemes and its heavy, dark-green, glossy, pinnate leaves it should prove a desirable addition to the drooping shrubs suitable for growing in regions having but slight frosts. The flowers are said to be pollinated by birds, in its native haunts."

34717. DODONAEA VISCOSA (L.) Jacq.

"A small hard-wooded tree with viscid shoots, and linear-oblong leaves 1 to 3 inches long. Flowers green, in small terminal panicles. Fruit dark brown, flat, winged. Occurs in dry woods on both islands of New Zealand. The wood is much valued by settlers for making mauls, as it does not split."

34718. GAULTHERIA OPPOSITIFOLIA Hook. f.

"The gaultherias are the most attractive of the native New Zealand heaths, with tiny white bell-shaped flowers."

34719. GAULTHERIA RUPESTRIS (L. f.) Don.

"A very variable erect or prostrate bush, with small white flowers in racemes, occurring among rocks throughout both islands of New Zealand."

34720. PHORMIUM TENAX Forst. Phormium.

"Ornamental form with green and purple leaves. Some forms will stand temperature as low as 15° F. without injury and only at 9° F. are the leaves killed."

34721. PITTOSPORUM BUCHANANI Hook. f.

"A species from New Zealand, which may prove useful like other species for ornamental hedges. Seeds coated with a viscid substance."

34722. PITTOSPORUM RALPHII Kirk.

"A beautiful, somewhat laxly branched shrub 15 to 20 feet in height, found in the central district of the North Island of New Zealand. Its dark-crimson fascicled little flower bells with their slightly emergent yellow anther tips, resting on the downy white young foliage, make it, when in bloom, one of the most attractive of the large New Zealand shrubs. The ripe introrse anthers may often be found in contact with the viscid stigmas, so that the plant is probably frequently self-pollinated."

34715 to 34724—Continued.

34723. *SOPHORA TETRAPTERA* J. Miller.

"A large flowered tree with deep-yellow blossoms, attaining a diameter of 3 feet. Leaflets in 10 to 20 pairs."

34724. *CORDYLINE INDIVISA* (Forst. f.) Steudel.

"A small tree not often more than 10 feet in height, found in the North and Middle Islands of New Zealand. Its leaves are very thick and leathery, with yellowish midribs. The flowers are in a drooping panicle. The fiber of the leaves is said to be stronger than that of *Phormium* and was used by the Maoris in making garments."

34725 and 34726. *ACANTHOPHOENIX* spp.

Palm.

From Port Louis, Mauritius. Presented by Mr. G. Regnard. Received December 21, 1912.

"These are two of our forest prickly palms, the cabbage of which is commonly eaten when the tree is over 5 or 6 years of age, and is quite superior to that of *Dictyosperma alba* and *Areca rubra*." (Regnard.)

34725. *ACANTHOPHOENIX CRINITA* (Bory) Wendl.

34726. *ACANTHOPHOENIX RUBRA* (Bory) Wendl.

34727. *ANNONA CHERIMOLA* Miller.

Cherimoya.

From San Jose, Costa Rica. Presented by Mr. Ad. Tonduz, botanist, National Museum. Received December 16, 1912.

See S. P. I. No. 32478 for previous introduction.

BOTANICAL NOTES AND PUBLICATION OF NEW NAMES.

PLANTS LISTED IN PREVIOUS INVENTORIES.

25630. *MALUS FUSCA DIVERSIFOLIA* (Bong.) Schneider.

(*Malus diversifolia* (Bong.) Roemer.)

This native Alaskan crab apple, received from the Alaska Agricultural Experiment Station, Sitka, was listed as *Malus diversifolia* (Bong.) Roemer. It is now considered, however, a subspecies of *Malus fusca*, and should read *Malus fusca diversifolia* (Bong.) Schneider.

26672 and 26685. *JASMINUM FRUTICANS* L.

These two jasmines secured by Mr. Frank N. Meyer, near Baidari, Crimea, Russia, have been determined as above.

PLANTS LISTED IN THIS INVENTORY.

34355. *SAGUERUS MINDORENSIS* (Beccari) O. F. Cook.

(*Arenga mindorensis* Beccari, Perkins, Fragmenta Florae Philippinae, p. 48, 1904.)

Seeds of a Philippine palm were received as *Arenga mindorensis* Beccari, the name under which the species was first described. The generic name Areng was published in 1803 by Labillardière (Mém. Inst. Nat. Paris, Sci. Math. Phys., vol. 4, p. 209) with one species, *Areng saccharifera* (p. 215), now identified with *Saguerus pinnata* Wurm. (Verh. Batav. Gen., vol. 1, p. 351, 1779), the type of the genus *Saguerus*. As both genera were founded on the same species, the older name *Saguerus* is being used instead of Areng, or Arenga.

34578. *PSEDERA THOMSONI* (Lawson) Stuntz.

(*Vitis thomsoni* Lawson, in Hooker, Flora British India, vol. 1, p. 657, 1875.)

(*Parthenocissus thomsoni* Planchon, in De Candolle, Monographia Phanerogamarum, vol. 5, p. 453, 1887.)

Plants of this vitaceous climber from China were received under the name *Parthenocissus thomsoni*, published in 1887 by Planchon, based on *Vitis thomsoni* Lawson. The earliest name applied to this genus, however, is *Psedera* of Necker (Elementa, vol. 1, p. 158, 1790). It is therefore necessary to adopt here the name *Psedera thomsoni*.

34645. *SOJA MAX* (L.) Piper.

The soy bean has been listed in previous Inventories as *Glycine hispida* Moench. Mr. C. V. Piper has recently shown (Journ. Amer. Soc. Agron., vol. 6, p. 75-84, 1914) that the earliest name given by Linnæus to this plant was *Phaseolus max*, that the generic name should be *Soja*, and that the correct name is therefore *Soja max* (L.) Piper.

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